

696 142

7908150588

PHILADELPHIA ELECTRIC COMPANY  
PEACH BOTTOM ATOMIC POWER STATION  
TECHNICAL-MANAGERIAL RESOURCES  
DOCKET NO. 50-277  
50-278

696 143

PHILADELPHIA ELECTRIC COMPANY  
PEACH BOTTOM ATOMIC POWER STATION  
MANAGERIAL - TECHNICAL RESOURCES

Docket No. 50-277 & 50-278

This report describes the technical and management resources available to the Philadelphia Electric Company, to anticipate and preclude or respond to unusual events at the Peach Bottom Atomic Power Station. The information is present as follows:

1. Management Resources (off-site)

Figures 1, 2, 3, and 5 present the Philadelphia Electric Company managerial organization that has the authority to allocate technical resources involving all activities at our nuclear generating facilities. A description of the function, responsibilities, and authority of the management positions; and the educational and experience background of the individuals presently assigned to these positions, are presented in Tables 1, 2, 3, and 4.

2. Technical Resources (plant staff)

Figure 4 presents the Peach Bottom Atomic Power Station organization of managers and professional technical personnel. Table 5 describes the position function, and educational and experience background of the individuals presently assigned to these positions.

3. Technical Resources (non-plant staff)

A summary of the offsite technical professional resources, including educational and experience backgrounds, is presented in Tables 6, 7, and 8. These tables include both managerial and non-managerial personnel. Some of our technical personnel presently involved with non-nuclear activities, have had previous nuclear experience or have technical skills that may be of value during a nuclear incident. Therefore, several non-nuclear related divisions/sections have been included in this table. Table 9 provides a list of other companies that could be called upon to provide technical support.

Note: We have indicated in the figures and tables whether the technical support assignment is on the basis of full time (F), part-time (P), or not assigned at all (N) but could be made available.

## TABLE OF CONTENTS

Table 1	Chief Executives
Table 2	Management Resources (off-site) - Electric Production Department
Table 3	Management Resources (off-site) - Engineering and Research Department
Table 4	Management Resources (off-site) - Purchasing and General Services Department
Table 5	Peach Bottom Plant Staff
Table 6	Offsite Technical Resource Summary - Electric Production Department
Table 7	Offsite Technical Resource Summary - Engineering and Research Department
Table 8	Offsite Technical Resource Summary - Purchasing Department
Table 9	Outside Companies Providing Technical Support
Figure 1	Executive Organization
Figure 2	Electric Production Department Organization
Figure 3	Engineering and Research Department Organization
Figure 4	Peach Bottom Atomic Power Station Organization
Figure 5	Purchasing and General Services Department Organization



TABLE 1  
Management Resources - Chief Executives

A. Position: Chairman of the Board

1. Function, Responsibility and Authority

Presides at the meetings of the stockholders and of the Board of Directors; and performs other duties that may from time to time be requested of him by the Board of Directors.

2. Educational Background

- a. BS Electrical Engineering
- b. Licensed Professional Engineer

3. Work Experience

- a. Chairman of the Board - 1 year
- b. Chairman of the Board and Chief Executive Officer - 7 years
- c. President and Chief Executive Officer - 1 year
- d. President - 5 years
- e. Executive Vice President - 3 years
- f. Vice President, Engineering & Research - 1 year
- g. Manager, Engineering and Research - 1 year
- h. Engineering and managerial experience at fossil generating stations - 16 years

4. Other Experience

- a. Philadelphia Electric and Subsidiary Company, Director
- b. Electrical Association of Philadelphia, Board of Governors
- c. Edison Electric Institute, Advisory Committee
- d. American Gas Association, Director
- e. Association of Edison Illuminating Company, Executive Committee
- f. Cornell University Engineering Council
- g. Pennsylvania Advisory Committee on Atomic Development and Radiation Control\*
- h. National Reactor Testing Facility, Idaho Falls - participated in the development program for the Nautilus\*
- i. High Temperature Reactor Development Associates; organized support for the development of the HTGR prototype - Peach Bottom Unit No. 1\*

TABLE 1 (cont'd)

- j. Atomic Power Development Associates\*
- k. Power Reactor Development Corporation, ENRICO FERMI Project\*

TABLE 1 (cont'd)

B. Position: President and Chief Executive Officer

1. Function, Responsibility, and Authority

Responsible for establishing Company goals, and governing all activities of the Company, within the policies set by the Board of Directors.

2. Educational Background

- a. BS Mechanical Engineering
- b. MS Mechanical Engineering
- c. MS Industrial Management
- d. Licensed Professional Engineer

3. Work Experience

- a. President and Chief Executive Officer - 1 year
- b. President - 7 years
- c. Executive Vice President - 2 years
- d. Vice President, Engineering & Research - 2 years\*
- e. Manager, Engineering & Research - 4 years\*
- f. Director of Research - 2 years
- g. Staff Engineering, Office of Vice President in Charge of Research and Development - 2 years
- h. Engineer-In-Charge, Mechanical Research Station, Research Division - 2 years\*
- i. Senior Engineer, Station Economy - 1 year
- j. Engineer, Office of Vice President - 2 years
- k. Jr. Engineer, Office of Vice President - 1 year
- l. Jr. Mechanical Engineer - 2 years

4. Other Experience

- a. Atomic Industrial Forum Board of Directors and Chairman, Public Affairs and Information Committee\*
- b. Edison Electric Institute - Chairman, Policy Committee on Energy Resources - Chairman, Task Force on Federal Reorganization in the Energy Field\*
- c. Electric Power Research Institute - Chairman, LMFBR Utility Advisory Committee\*
- d. EEI-EPRI - Chairman, Joint Utility Committee on the Breeder\*
- e. Dow Detroit Edison Power Study Group 1953-1955 (Enrico Fermi Project)\*

TABLE 1 (cont'd)

C. Position: Executive Vice President

1. Function, Responsibility, and Authority

Reporting to the President, assists in the general management of all Company operations and for coordinating interaction of all departments in implementing policies to achieve Company goals.

2. Educational Background

- a. BS Industrial Administration
- b. Columbia University Executive Program in Business Administration

3. Work Experience

- a. Executive Vice President - 1 year
- b. Vice President, Finance & Accounting Department - 7 years
- c. Comptroller - 4 years
- d. Manager, Financial Division - 1 year
- e. Assistant Manager, Financial Division - 2 years
- f. Electric Superintendent - Schuylkill Division - 3 years
- g. Overhead Section, Transmission & Distribution - 3 years
- h. Engineer - T & D - 5 years

4. Other Experience

- a. Licensed Hydro Project Accounting Committee
- b. Edison Electric Institute

TABLE 2  
Management Resources (Offsite)  
Electric Production Department

NOTE: Position designation letter corresponds with designations on Figure 2, Electric Production Department. An asterisk identifies directly related nuclear experience.

A. Position: Vice President, Electric Production Department

1. Functions, Responsibilities, and Authority

Responsible for the direction, control, and coordination of electric generation facilities, electric system dispatching and central steam heating system, including maintenance, personnel, and budgeting.

2. Educational Background

- a. BS - Mechanical Engineering
- b. Graduate Studies in Nuclear Power, and Nuclear Fuel Management
- c. Engineers Club technical courses in nuclear physics and radiation
- d. Licensed Professional Engineer
- e. General Electric BWR Simulator Training Program\*

3. Work Experience

- a. Vice President - Electric Production - 1 year\*
- b. Manager - Electric Production - 5 years\*
- c. General Superintendent, Station Operating - 1 year\*
- d. Superintendent - Nuclear Power - 3 years\*
- e. Superintendent - Fossil Generating Station - 3 years
- f. Assistant Superintendent - Fossil Generating Station - 4 years
- g. Plant Engineer - Fossil Generating Station - 1 year
- h. Results Engineer - Fossil Generating Station - 3 years
- i. Engineer - fossil Generating Station - 8 years

4. Other Experience

- a. Association of Edison Illuminating Company - Committee on Power Generation
- b. EEI - USWAG Steering Committee
- c. ASME - Operating and Maintenance Committee

TABLE 2

- d. ANSI - Nuclear Standards Management Board\*
- e. Charter member - Operations and Safety Review Committee, Peach Bottom Unit No. 1 - 9 years\*
- f. Chairman, O&SR Committee, Peach Bottom Units Nos. 2 & 3 - 5 years\*

TABLE 2

B. Position: Manager, Electric Production Department

1. Function, Responsibility, and Authority

Reporting to the Vice President, Electric Production Department, assists in the direction, control, and coordination of electric generation facilities, electric system dispatching and central steam heating system, including maintenance, personnel and budgeting.

2. Educational Background

- a. BS - Electrical Engineering
- b. Executive Development Program - Cornell University
- c. Nuclear Power Courses - NW University
- d. Licensed Professional Engineer

3. Work Experience

- a. Manager, Electric Production - 1 year\*
- b. General Superintendent, Maintenance Division - 3 years\*
- c. Superintendent, System Operation - 5 years
- d. Assistant Superintendent, System Operation - 6 years
- e. Staff Engineer, General Administration Department - 6 years
- f. Senior Engineer, System Planning - 3 years
- g. Associate Senior Engineer, System Planning - 2 years
- h. Engineer, System Planning - 8 years

4. Other Experience

- a. EEI Prime Movers Committee
- b. US-USSR Joint Project on Electric Power System Planning and Dispatching
- c. Chairman, O&SR Committee, Peach Bottom Unit Nos. 2 & 3\*



TABLE 2

C. Position: Superintendent, Administration Division

1. Function, Responsibility, and Authority

Administration and supervision of the Administration Division which is responsible for the development and implementation of policies and procedures for the training and qualification of employees assigned to operate generating plants; development of blocking procedures to insure safe operating practice; and administers departmental policy in the field of personnel relations.

2. Education Background

- a. A.B. Mathematics
- b. Graduate courses in law

3. Work Experience

- a. Superintendent - Administration - 2 years\*
- b. Superintendent - Quality Assurance - 4 years\*
- c. Administration Engineer - 3 years
- d. Asst. Admin. Engr. - Office of Vice President, Electric Operations - 6 years
- e. Senior Tech. Assit. - Office of Vice President, Electric Operations - 6 years
- f. Supervisor - Methods & Training Electric Operations - 5 years
- g. Personnel Department - 3 years



TABLE 2

D. Position: Superintendent, Generation Division - Fossil & Hydro

1. Functions, Responsibilities, and Authority

Supervise operation, engineering, and maintenance of fossil and hydro generating stations. Monitor and control costs, performance, maintenance scheduling, and availability improvements of these facilities.

2. Educational Background

- a. BS - Electrical Engineering
- b. Licensed Professional Engineer

3. Work Experience

- a. Superintendent of Generation Division, Fossil-Hydro, for two (2) years (directs activities of 104 technical people)
- b. Assistant Superintendent (5 years) and Superintendent (5 years) at various fossil generating/distribution facilities
- c. Twenty (20) years fossil generating plant engineering

TABLE 2

E. Position: Superintendent - Quality Assurance Division

1. Functions, Responsibilities, and Authority

Administers the Quality Assurance Division which is responsible for planning, developing, and establishing the quality assurance policies and practices to be implemented in the operation, maintenance and modification of nuclear power plants, and for directing the quality assurance audit program.

2. Educational Background

- a. BS - Mechanical Engineering

3. Work Experience

- a. Superintendent - Quality Assurance Division - 2 years\*
- b. General Superintendent - Maintenance Division - 5 years\*
- c. Assistant General Superintendent - Maintenance Division - 9 years
- d. Engineer - Maintenance Division - 8 years
- e. Engineer - fossil generating stations - 3 years

4. Other Experience

- a. Standards Committee Participation: IAEA Working Group SG-07, Maintenance Standards for Nuclear Power Plants\*
- b. Various company sponsored courses in nuclear power and radiation\*

TABLE 2

F. Position: Superintendent, Generation Division - Nuclear

1. Functions, Responsibilities, and Authority

Directs the Generation Division - Nuclear which is responsible for the supervision of all nuclear generating plants, and the administration of operating procedures and policies relative to their operation and performance.

2. Educational Background

- a. BS - Electrical Engineering
- b. Oak Ridge School of Reactor Technology
- c. National Reactor Testing Station - Idaho Falls - Operator Training Program
- d. Management - Executive Development Program - Cornell University

3. Work Experience

- a. Superintendent, Generation Division - Nuclear; Assistant General Superintendent, Generation Division; Superintendent Nuclear Power - 8 years\*
- b. Superintendent - Peach Bottom Station - 4 years\*
- c. Assistant Superintendent - Peach Bottom Station - 3 years\*
- d. Plant Engineer - Peach Bottom Station - 3 years\*
- e. Engineer - fossil generating stations - 8 years

4. Other Experience

- a. Senior Licensed Operator - 6 years\*
- b. US Navy - qualified destroyer engineering officer
- c. Oak Ridge Reactor Operator\*
- d. Engineering Test Reactor Qualified Operator - Idaho N.R.T.S.\*
- e. Participation on Standards Committees: N18.17 Industrial Security for Nuclear Power Plants; N18.1 -ANS 3.1 - Selection & Training of Nuclear Power Plant Personnel; N18.7-ANS 3.2 Administrative Controls of Quality Assurance for Operational Phase of Nuclear Power Plants; N546-ANS 3.4 Medical Certification & Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants\*
- f. Chairman EEI Reactor Assessment Panel Working Group\*

TABLE 2

G. Position: Superintendent - Services Division

1. Functions, Responsibilities, and Authority

Administration and supervision of the Services Division which is responsible for budget and cost control, development and implementation of computer applications, and chemical and environmental programs.

2. Educational Background

- a. BS - Chemical Engineering
- b. Graduate courses in chemistry
- c. B.A.M.

3. Work Experience

- a. Superintendent, Services Division - 4 years\*
- b. Director, Environmental & Laboratory Division - 2 years\*
- c. Chief Chemist, Chemical Laboratory - 11 years
- d. Assistant Chief Chemist, Chemical Laboratory - 2 years
- e. Senior Engineer, Chemical Laboratory - 2 years
- f. Power plant chemistry experience with Combustion Engineering Company, Chemical Engineering Section - 6 years

4. Other Experience

- a. Standards Committee: ASTM D-19 on Industrial Wastes - 6 years; ASME PTC-19 on Demineralizers - 2 years
- b. Chairman of Environmental Improvement Committee
- c. Environmental Protection Agency Electric Utility Working Sector Group
- d. Member of the O&SR Committee, Peach Bottom Unit Nos. 2 & 3\*

TABLE 2

H. Position: Superintendent, System Operations

1. Functions, Responsibilities, and Authority

Administration and supervision of the System Operation Division whose function is the scheduling of electric systems, accounting for interchange with other utilities, and operation of the operations computer system.

2. Educational Background

- a. BS - Electrical Engineering
- b. Basic Nuclear Reactor Technology Program

3. Work Experience

- a. Assistant Superintendent and Superintendent of System Operations - 5 years
- b. Nine (9) years experience as Engineer in Transmission and Distribution Department

TABLE 2

I Position: Assistant Superintendent - System Operation Division

1. Functions, Responsibilities, and Authority

Reporting to the Superintendent, System Operation Division, assists in the administration and supervision of the System Operation Division whose function is the scheduling of electric systems, accounting for interchange with other utilities, and operation of the operations control system.

2. Educational Background

- a. BS - Electrical Engineering

3. Work Experience

- a. Assistant Superintendent, System Operation - 2 years
- b. Assistant Superintendent - fossil generating station - 2 years
- c. Assistant Superintendent - System Operation - 1 year
- d. Supervising Engineer - System Operation - 4 years
- e. Presidential Executive Interchange Program of the US Federal Government, Engineer in Charge of Fuels, Energy Section, Office of Air Quality Planning and Standards, US Environmental Protection Agency
- f. Engineer - System Operation - 7 years
- g. Engineer - fossil generating stations - 2 years

4. Other Experience

- a. IEEE - Chairman of System Protection and Operation

TABLE 2

J Position: Supervising Engineer, System Operation Division

1. Functions, Responsibilities, and Authority

Responsible for operational planning and analysis of the transmission system.

2. Educational Background

- a. BS - Electrical Engineering
- b. Licensed Professional engineer

3. Work Experience

- a. Supervising Engineer - System Operations - 7 years
- b. Supervising Engineer - System Planning - 2 years
- c. Engineer - System Planning - 11 years
- d. Engineer - Electrical Engineering Department - 7 years



TABLE 2

K. Position: Superintendent - Maintenance Division

1. Functions, Responsibilities, and Authority

Administration and supervision of the Maintenance Division whose function is to coordinate all activities to service and maintain production and transmission facilities.

2. Educational Background

- a. BS - Electrical Engineering

3. Work Experience

- a. Superintendent, Maintenance Division - 1 year\*
- b. Assistant General Superintendent - Maintenance Division - 6 years\*
- c. Assistant to General Superintendent - Maintenance Division - 3 years
- d. Assistant Superintendent - System Operations - 1 year
- e. Assistant Superintendent - Substations - 1 year
- f. Assistant Superintendent - Electrical Maintenance - 8 years
- g. Engineer, Maintenance Division - 2 years
- h. Insulation Tester, Maintenance Division - 2 years

4. Other Experience

- a. Member of the O&SR Committee, Peach Bottom Unit Nos. 2 & 3\*



TABLE 2

L. Position: Superintendent, Training Section

1. Functions, Responsibilities, and Authority

Directs the Training Section which is responsible for the training and qualification of employees assigned to the generating stations.

2. Educational Background

- a. BS - Mechanical Engineering
- b. College courses in quality control

3. Work Experience

- a. Superintendent - Training Section - 2 years\*
- b. Engineer - fossil stations - 30 years (Assistant Superintendent - 10 years)

TABLE 2

M. Position: Superintendent, Methods Section

1. Functions, Responsibilities, and Authority

Planning, development, and implementation of inspection activities to assure compliance with Department Permits and Blocking Handbook; and established operating methods.

2. Educational Background

- a. Various college level courses in the fields of Mechanical engineering and Instrumentation
- b. Quality Assurance Audit School
- c. Management Oversight and Risk Tree Program presented by the NRC - 1 week

3. Work Experience

- a. Superintendent, Methods Section - 14 years\*
- b. Operating experience, fossil generating stations - 28 years (10 years as a Shift Superintendent)

TABLE 2

N. Position: Supervising Engineer - Generation Division/Nuclear  
(Radiation Protection)

1. Functions, Responsibilities, and Authority

Develops and administers the radiation protection program for nuclear facilities.

2. Educational Background

- a. BS - Chemical Engineering
- b. Graduate Courses - Chemistry and Radiochemistry
- c. Shippingport Course - Nuclear Plant Operations, Radiochemistry (4 months)
- d. Various one and two week courses at Taft Institute; Cincinnati, Ohio in Radiological Health
- e. Health Physics certification prep courses (5 weeks)
- f. Health Physics training at SRP (6 months)

3. Work Experience

- a. Supervising Engineer - Nuclear Generation Division - 3 years\*
- b. Health Physics and Chemistry Supervisor at Peach Bottom - 13 years\*
- c. Engineer - fossil generating station - 9 years
- d. Chemist - 6 years

4. Other Experience

- a. Standards Committee: ASTM C-10 and ASTM D-4\*
- b. Licensed Senior Operator - Peach Bottom Unit 1\*

TABLE 2

O. Position: Engineer-In-Charge, Nuclear Section

1. Functions, Responsibilities, and Authority

Manages various technical services in support of nuclear power production by directing activities in reactor fuel management; licensing inspection, and enforcement; and special engineering projects.

2. Educational Background

- a. BS - Mining Engineering
- b. BS - Civil Engineering

3. Work Experience

- a. Engineer-In-Charge - Nuclear Section - 5 years\*
- b. Assistant Superintendent - fossil generating station - 3 years
- c. Plant Engineer - Peach Bottom Unit 1 (HTGR) - 3 years\*
- d. Shift Reactor Engineer (SLO) Peach Bottom Unit 1 (HTGP) - 6 years\*
- e. Reactor Engineer (Operations) Material Test Reactor - 1 year\*
- f. Engineer - fossil generating station - 6 years

4. Other Experience

- a. Standards Committee - ANS, Fuel Handling and Storage (HTGR)\*
- b. Licensed Senior Operator (cold) - 6 years\*
- c. Q - clearance previously held\*

TABLE 2

P. Position: Station Superintendent - Nuclear Generating Station

1. Functions, Responsibilities, and Authority

Supervise and direct the employees performing operating, engineering, maintenance, and all other associated work in the generating station.

2. Educational Background

- a. BS - Mechanical Engineering
- b. MS - Mechanical Engineering
- c. Certified BWR SRO at BWR Simulator Training Center

3. Work Experience

- a. Superintendent, Limerick Atomic Power Station (under construction) - 3 years\*
- b. Superintendent, fossil generating station
- c. Assistant Superintendent, fossil generating station
- d. Plant Engineer, fossil generating station
- e. Results Engineer, fossil generating station
- f. Engineer, fossil generating station

TABLE 2

Q. Position: Assistant Station Superintendent - Nuclear Generation Station

1. Functions, Responsibilities, and Authority

Reporting to the Station Superintendent, assist in supervising and directing the employees performing operating, engineering, maintenance, and all other associated work in the generating station.

2. Educational Background

- a. BS - Mechanical Engineering
- c. Licensed Professional Engineer (Mechanical Engineering)
- d. Foxboro Instrument School - 4 weeks
- e. Reactor Theory - University of Michigan - 4 weeks
- f. GE Nuclear and Process Instrument School - 3 weeks
- g. GE Nuclear Engineering School - 10 weeks
- h. GE BWR Simulator Training Program - 6 weeks
- i. Harvard School of Radiological Health - 1 week

3. Work Experience

- a. Assistant Superintendent - Limerick Station - 3 years\*
- b. Engineer - Technical - Peach Bottom 2-3 (BWR) - 5 years\*
- c. Results Engineer - Peach bottom (HTGR) - 4 years\*
- d. Engineer - Peach Bottom - 4 years\*

4. Other Experience

- a. Senior Licensed Operator, HTGR - 8 years, BWR - 6 years\*

TABLE 2

P. Position: Engineer-In-Charge, Chemistry Section

1. Functions, Responsibilities, and Authority

Administration and supervision of Chemistry Section whose activities include fuel analysis, lubrication, water chemistry, chemical cleaning, corrosion, and material selection.

2. Educational Background

a. BS - Physics

3. Work Experience

- a. Engineer-In-Charge, Chemistry Section - 1 year\*
- b. Assistant Superintendent, fossil generating station - 7 years
- c. Plant Engineer, fossil generating station - 4 years
- d. Results Engineer, fossil generating station - 5 years
- e. Engineer, fossil generating station - 6 years

TABLE 2

S. Position: Supervising Engineer - Chemistry Section

1. Functions, Responsibilities, and Authority

Reporting to the Engineer-In-Charge, Chemistry Section, assists in the administration and supervision of the Chemistry Section

2. Educational Background

- a. BS - Chemistry
- b. MS - Chemistry

3. Work Experience

- a. Supervisor - Chemical Laboratory - 12 years\*
- b. Engineer - fossil generating stations - 5 years
- c. Chemist - 11 years

4. Other Experience

- a. Standards Committees: ASTM D-2, ASTM D-5, ASTM D-27



TABLE 2

T. Position: Engineer-In-Charge, Computer Applications Section

1. Functions, Responsibilities, and Authority

Administers and supervises the Computer Applications Section which is responsible with measurement of performance to achieve economic development of software and hardware associated with computer applications.

2. Educational Background

- a. BS - Mechanical Engineering
- b. Graduate courses in Mechanical Engineering
- c. Computer Software Technology training program

3. Work Experience

- a. Engineer-In-Charge, Services Division - 6 years\*
- b. Assistant Superintendent - Station Economy Division - 6 years
- c. Supervisory Engineer - Station Economy division - 3 years
- d. Senior Engineer - Station Economy Division - 3 years
- e. Engineer - Station Economy Division - 5 years
- f. Electronic Computer Committee - 2 years
- g. Engineer - fossil generating station - 3 years

4. Other Experience

- a. Senior member - IEEE
- b. Chairman - EET Engineering and Technical Computer
- c. Participation on Standards Committees: IEEE, Power Generation Committee (computer control standards for nuclear plants)\*

TABLE 2

U. Position: Superintendent, Electrical Section

1. Functions, Responsibilities, and Authority

Administration and supervision of the Maintenance Division, Electrical Section. Responsible for the planning, scheduling, implementation, and cost control of maintenance activities associated with electrical equipment at the production and transmission facilities.

2. Educational Background

a. BS - Electrical Engineering

3. Work Experience

- a. Superintendent, Electrical Section - 5 years\*
- b. Assistant Superintendent, Substations - 2 years
- c. Engineer, Substations - 6 years
- d. Engineer - 6 years

TABLE 2

V. Position: Superintendent, Mechanical Section

1. Functions, Responsibilities, and Authority

Administration and supervision of the Maintenance Division, Mechanical Section. Responsible for the planning, scheduling, implementation, and cost control of maintenance activities associated with mechanical equipment of the production and transmission facilities.

2. Educational Background

- a. BS - Mechanical Engineering
- b. MBA
- c. General Electric Simulator (BWP) Training Program (1 week)
- d. Nuclear Power Course - University of Michigan (1 month)
- e. Licensed Professional Engineer

3. Work Experience

- a. Superintendent, Mechanical Section, Maintenance Division - 1 year\*
- b. Startup Director, Limerick Generating Station - 2 years\*
- c. Staff Engineer, Corporate Planning - 1 year
- d. Assistant Superintendent, fossil generating station - 1 year
- e. Senior Engineer, Nuclear Section - 4 years\*
- f. Engineer, Fossil-Hydro Section - 2 years
- g. Engineer - fossil generating stations - 9 years

TABLE 2

W. Position: Superintendent, Station Section

1. Functions, Responsibilities, and Authority

Administration and supervision of the Station Section, Maintenance Division, whose function is the planning, scheduling, and direction of maintenance personnel assigned to all generating stations.

2. Educational Background

- a. Westinghouse Turbine Training Course
- b. B & W Boiler Training Program
- c. P & W Jet Engine Course
- d. Mechanical Engineering Correspondence Course

3. Work Experience

- a. Maintenance Division - 43 years including 33 years supervisory experience

TABLE 2

X. Position: Supervising Engineer, Maintenance Division

1. Functions, Responsibilities, and Authority

Supervises the Maintenance Division's technical section, whose function is the engineering evaluation of maintenance programs, design modifications, and the preparation of cost estimates.

2. Educational Background

- a. BS - Mechanical Engineering
- b. Various courses in welding techniques and nuclear power

3. Work Experience

- a. Supervising Engineer, Maintenance Division - 4 years\*
- b. Plant Engineer - fossil generating station - 3 years
- c. Engineer, Maintenance Division - 10 years
- d. Engineer - fossil generating stations - 4 years

TABLE 3

MANAGEMENT RESOURCES (OFFSITE)

ENGINEERING AND RESEARCH DEPARTMENT

The management positions described on the following pages are those shown in Figure 3, Organization Chart for the Engineering and Research Department. The educational background and experience described for each of the designated positions is for the incumbent.

ENGINEERING AND RESEARCH DEPARTMENT

VICE PRESIDENT

AND

MANAGER

696 176

Position: Vice President, Engineering and Research Department

1. Functions, Responsibilities and Authority

Responsible for the direction, control and coordination of all engineering and research activities of the Company, including the planning, budgeting, designing, construction, and modification of the Company's capital plant, the testing of designated instrumentation, system equipment, and for the selection and assignment of personnel within the department.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. Master of Science in Mechanical Engineering.
- c. Management Training Program, Columbia University.
- d. Operating Supervisor Training Program at Shippingport, 1962.
- e. Licensed professional engineer.

3. Work Experience

- a. Vice President, Engineering and Research Department, 1968-present. \*
- b. Manager, Electric Operations Department - 1 year. \*
- c. General Superintendent Station Operating Department - 2 years. \*
- d. Manager, Nuclear Power - 2 years. \*
- e. Superintendent, Peach Bottom Atomic Power Station - 3 years. \*
- f. Superintendent and Assistant Superintendent, Cromby Station - 7 years.
- g. Various engineering positions in Station Operating Department and Mechanical Engineering Division - 12 years.

4. Other Experience

- a. Past president American Nuclear Society. \*
- b. Member executive committee and standards committee, American Nuclear Society. \*
- c. Member management committee, Gas Cooled Reactor Associates. \*
- d. Member Electric Power Research Institute research advisory committee. \*
- e. Member Edison Electric Institute utility radiation standards committee. \*
- f. Member of review committee, Argonne National Laboratory applied physics division. \*

\* Directly related nuclear experience.



Position: Manager - Engineering and Research Department

1. Functions, Responsibilities and Authority

Under direction of the Vice President, participates in the direction, control and coordination of all Engineering and Research activities of the Company, including the planning, budgeting, designing, construction and modification of the Company's capital plant and in the selection and assignment of personnel within the Department. Also has responsibility for directly monitoring the plans and progress of major capital projects.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Three year training program for operating supervisor at Peach Bottom Atomic Power Station.
- c. Two year training program for operating supervisor at Enrico Fermi Atomic Power Station.

3. Work Experience

- a. Manager, Engineering and Research Department - 1968 - present. \*
- b. Superintendent, Station Economy Division, 1967. \*
- c. Superintendent, Peach Bottom Atomic Power Station, 4 years. \*
- d. Senior Licensed Operator, Peach Bottom Atomic Power Station - 1965. \*
- e. Assistant Superintendent, Peach Bottom Atomic Power Station, 1 year. \*
- f. Shift Supervisor, Enrico Fermi Atomic Power Station, 3 years. \*
- g. Various supervisory and engineering positions in Philadelphia Electric Co. generating stations.
- h. Member Operation and Safety Review Committee for Peach Bottom Units 2 & 3. \*

4. Other Experience

- a. Member, Reactor Safety Steering Committee, Atomic Industrial Forum. \*
- b. Chairman, Committee on Electric Power Apparatus, Association of Edison Illuminating Companies. \*

\* Directly-related nuclear experience.

ENGINEERING AND RESEARCH DEPARTMENT

MECHANICAL ENGINEERING DIVISION

Position: Chief Mechanical Engineer

1. Functions, Responsibilities and Authority

Responsible for the operation and performance of the Mechanical Engineering Division whose principal function is the mechanical and general engineering work required in the planning, design, and construction of Company plant and equipment, including Peach Bottom Units 2 & 3, Limerick Units 1 & 2 as well as all gas, fossil and hydro facilities.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. Columbia University Executive Program in Business Administration.
- c. General Electric BWR Simulator Course - Fundamentals of BWR Operation.
- d. Licensed professional engineer.

3. Work Experience

- a. Chief Mechanical Engineer, 1969 - present. \*
- b. Assistant Chief Mechanical Engineer, 1968-69. \*
- c. Engineer in Charge, Power Plant Design Section, 1965-1968. \*
- d. Various supervisory and engineering positions in Mechanical Engineering Division, 1947-present.
- e. Member Operation and Safety Review Committee for Peach Bottom Units 2 & 3. \*

4. Other Experience

- a. Secretary of Engineering Task Force of the Joint Generation Projects for Salem and Peach Bottom Nuclear Facilities. \*
- b. Member, Commonwealth of Pennsylvania Boiler Advisory Board, fossil and nuclear, 1967 - present. \*
- c. Member ASME Boiler - Pressure Vessel Committee, Section I on Power Boilers - 5 years.
- d. Past Chairman, Vice-Chairman, and Member of Prime Movers Committee of Edison Electric Institute - 10 years. \*

\* Directly-related nuclear experience

Position: Assistant Chief Mechanical Engineer

1. Functions, Responsibilities and Authority

Responsible for assisting in the operation and performance of the Mechanical Engineering Division whose principal function is the mechanical and general engineering work required in the planning, design, and construction of Company plant and equipment, as directed by the Chief Mechanical Engineer.

2. Educational Background

- a. Bachelor of Mechanical Engineering.
- b. Graduate Courses in Physics at St. Joseph's College from 1959 through 1960.
- c. Air Pollution & Control (Radiation, Gases, Particulate) at University of Massachusetts - USPHS in 1960.
- d. Radiation Protection and Control at Rutgers University in 1961.
- e. Nuclear Reactor Engineering at University of Michigan in 1965.
- f. Nuclear Power Plant Seminar at General Electric in 1965.
- g. Nuclear Power Reactor Safety at MIT in 1966.
- h. Uranium Exploration, Supply and Production at USAEC in 1967.
- i. Licensed professional engineer.

3. Work Experience

- a. Assistant Chief Mechanical Engineer, 1969-present. \*
- b. Engineer in Charge, Nuclear Engineering Section. \*
- c. Engineer in Charge, Mechanical Research Section, Research Division, and Project Engineer for Peach Bottom Unit 1 - 7 years. \*
- d. Various positions in Mechanical Engineering Division involving heat cycle systems and thermal - hydraulic calculations.
- e. Member Operation and Safety Review Committee, Peach Bottom Unit 1 (14 years) and chairman 5 years. \*

4. Other Experience

- a. Member, Fermi Plant Patent Committee, 1969-1974. \*
- b. Member Technical and Engineering Committee, Fermi Atomic Power Station, 1958-1972. \*
- c. Member Oak Ridge National Laboratories Equipment and Safety Committee - 3 years. \*
- d. Member ASME National Nuclear Power Division Executive Committee (chairman - 1 year), 1966-1974. \*
- e. PECO representative to Atomic Industrial Forum Committee on Reactor Safety, 1968-1970. \*
- f. PECO representative to Edison Electric Institute Reactor Safety Committee - 5 years. \*
- g. Alternate delegate to Governor's Committee (Penna.) on Radiation and Controls. \*
- h. Member EEI - Prince Movers Committee - 3 years. \*

\* Directly-related nuclear experience

Position: Engineer in Charge, Quality Assurance Section

1. Functions, Responsibilities and Authority

Responsible for supervision and functioning of the Quality Assurance Section whose primary purpose is to develop and assure implementation of the Engineering & Research Department's Quality Assurance Program.

2. Educational Background

- a. Bachelor of Science in Civil Engineering.
- b. ASME Section III Course, 1977.
- c. Lead Auditor Training Course, 1978.
- d. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, Quality Assurance Section 1977-present.\*
- b. Engineer in Charge, Industrial Section 1976-1977.\*
- c. Various supervisory and engineering positions in Mechanical Engineering Division (some involving nuclear experience), 1953-1976.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Power Plant Design Section

1. Functions, Responsibilities and Authority

Directs the Power Plant Design Section whose function is the engineering work required for the design, construction, modification and replacement of major mechanical equipment and systems used in the electric generating plants, such as: nuclear reactors, fossil-fired steam boilers, steam turbine generators, pumps, piping, valves, heat exchangers and other equipment, apparatus and appurtenances.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. Graduate courses in Nuclear & Process Piping Systems and Design Criteria for Failure Modes of Mechanical Structures.
- c. General Electric BWR Simulator Course - Fundamentals of BWR Operation.

3. Work Experience

- a. Engineer in Charge, 1971 - present. \*
- b. Project Manager, Peach Bottom Units 2 & 3, 1968-1971. \*
- c. Various supervisory and engineering positions in the Mechanical Engineering Division, 1950-1968.
- d. Alternate member, Operation and Safety Review Committee, Peach Bottom Units 2 & 3. \*

\* Directly-related nuclear experience

Position: Engineer In Charge, Power Plant Services Section

1. Functions, Responsibilities and Authority

Directs the employees of the Power Plant Services Section in their performance of the engineering work required in the design, construction, rearrangement, reinforcement, and rehabilitation of the mechanical features of specific power generation equipment, such as: gas turbine and diesel engine driven generators, steam power plant interior and exterior service equipment, fuel and ash handling and storage apparatus, air and water quality control systems, and steam heat and gas production and distribution systems.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering
- b. Licensed professional engineer

3. Work Experience

- a. Engineer in Charge, 1977 - present. \*
- b. Resident Project Manager, Limerick Generating Station, Units 1 and 2, 1975-1977. \*
- c. Project Manager, Peach Bottom Units 2 and 3, 1971-1975. \*
- d. Various supervisory and engineering positions in the Mechanical Engineering Division, 1951-1971.

\* Directly-related nuclear experience.



Position: Engineer-in-Charge, Nuclear and Environmental Section

1. Functions, Responsibility and Authority

Supervises and directs the functioning of the Nuclear and Environmental Section, which has as its objectives the preparation of material necessary to secure construction permits and operating licenses for nuclear power plants, the management of nuclear fuel and material and the radiological, thermal, and biological environmental monitoring programs in nuclear plant environs. This position represents the Company before governmental regulatory agencies in technical matters.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Master of Science in Electrical Engineering.
- c. General Electric BWR Simulator Course - Fundamentals of BWR Operation.
- d. Licensed professional engineer.

3. Work Experience

- a. Engineer-in-Charge, Nuclear and Environmental Section, 1978-present. \*
- b. Engineer-in-Charge, Nuclear Engineering Section, 1969-78. \*
- c. Engineer-in-Charge, Energy Conversion Research Section, 1967-1969. \*
- d. Engineer in Energy Conversion Research Section, 1963-1966. \*
- e. On loan to General Atomic HTGR Project 1962-1963. \*
- f. Electrical Project Engineer and Assistant Resident Engineer (PRDC) Fermi I, 1957-62. \*
- g. Various engineering and supervisory positions as electrical engineer, 1948-57.
- h. Member Operation and Safety Review Committee, for Peach Bottom Unit 1, 14 years. \*

4. Other Experience

- a. Member of BWR Mark I Owners Committee (4 years) and Chairman 2 years. \*
- b. EEI Nuclear Fuels Committee 7 years. \*
- c. One of the Authors of the EEI "Fast Reactor Study". \*

\* Directly-related nuclear experience.



Position: Engineer in Charge, Industrial Engineering Section

1. Functions, Responsibilities and Authority

Directs the Industrial Engineering Section whose primary functions are the design and design review of engineering and architectural features involved in the planning, construction, re-arrangement, re-inforcement and rehabilitation of company buildings and structures, and the planning and design of all building services, such as plumbing, heating and air conditioning, ventilation and elevators.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. Graduate courses in Nuclear and Process Piping Systems.
- c. Company course in fundamentals of Nuclear Power (10 wk. Program).

3. Work Experience

- a. Engineer in Charge, Industrial Engineering Section, 1977-present. \*
- b. Engineer in Charge, Power Plant Services Section, 1971-1977. \*
- c. Plant Superintendent, Eddystone Station, 1969-1971.
- d. Various supervisory and engineering positions in the Electric Production Department, 1948-1969.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Civil Section

1. Functions, Responsibilities and Authority

Directs functions of the Civil Section in performance of engineering work required for design, construction, modification, and maintenance of company structures, including buildings, foundations, bridges, roads, docks, and dams.

2. Educational Background

- a. Bachelor of Science
- b. Bachelor of Science in Civil Engineering
- c. Master of Science in Civil Engineering
- d. U. S. Army Corps of Engineer Course as Fallout Shelter Analyst.
- e. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, Civil Section - 7 years. \*
- b. Branch Head - Hydraulics - 4 years.
- c. Branch Head - Structures - 2 years.
- d. Engineer - 12 years.
- e. Chemical and Industrial Plant Design - 7 years.

\* Directly-related nuclear experience.

Position: Staff Engineer, Mechanical Engineering Division

1. Functions, Responsibilities and Authority

Acts as an aide to the Chief Mechanical Engineer and/or the Assistant Chief Mechanical Engineer performing engineering and administrative work of a specialized nature that is normally beyond the purview of the regularly organized Division Sections. This includes performing specialized work associated with mechanical plant and equipment, planning, design, new construction or rehabilitation projects.

2. Educational Background

- a. Bachelor of Science in Chemistry.
- b. Master of Science in Chemistry (Physical and Nuclear).
- c. Two additional years of graduate study in chemistry including nuclear reactor technology, particle physics, physical chemistry and organic chemistry at Rensselaer Polytechnic Institute.
- d. Graduate Assistant, Rensselaer Polytechnic Institute - 1950-1952; instructor in chemistry courses including nuclear chemistry laboratory. \*
- e. Research Associate, Rensselaer Polytechnic Institute - AEC contract for utilization of fission products, 1952-1954. \*
- f. General Atomic HTGR Operator Training Program and General Atomic Course in radiation protection. \*

3. Work Experience

- a. Staff Engineer, Mechanical Engineering Division, 1976-present. \*
- b. PECO Project Engineer, Salem Nuclear Generating Station (PWR) 1977-present. \*
- c. Group Leader, Meteorological and Radiation Group, Environmental Section, Mechanical Engineering Division 1975-1976. \*
- d. Senior Engineer, Environmental Section, Mechanical Engineering Division, 1973-1975. \*
- e. Senior Engineer, Energy Conversion Research Section, Research Division, 1969-1973. \*
- f. Senior Engineer, Nuclear Section, Mechanical Engineering Division, 1966-1969. \*
- g. Engineer and Senior Engineer, Mechanical Research Section, Research Division, 1963-1966. \*
- h. Special assignment to Atomic Power Development Associates, 1955-1963. \*
- i. Member Operation and Safety Review Committee for Peach Bottom Unit 1, 1966-1978. \*

4. Other Experience

- a. Atomic Industrial Forum - Subcommittee on Engineering Techniques for Reducing Occupational Exposures, 1978-present. \*
- b. Electric Power Research Institute - Task Force on Nuclear Safety & Analysis, 1974-present. \*

- c. Maryland Academy of Sciences - Environmental Research Guidance Committee (Advisory to Maryland Department of Natural Resources - Md. Power Plant Siting Program) (Vice Chairman 3 years), 1973-present. \*
- d. Technical Assistants' Advisory Committee on Transportation of Radioactive Materials - (Advisory to) Hazardous Substances Transportation Board of the Commonwealth of Pennsylvania, 1966-1974. \*
- e. Electric Research Council - Task Force on Nuclear Safety R&D, 1969-1973. \*
- f. State of Maryland - Power Plant Siting Program - Ad Hoc Monitoring Review Panel, 1971.
- g. Atomic Industrial Forum - Container Specification Review Group for shipment of radioactive materials - 5 years. \*
- h. Atomic Industrial Forum - Working Group on Reactor Safety R&D - 3 years. \*
- i. American Nuclear Society - Standards Committee N-18, 1972-present. \*

\* Directly-related nuclear experience.

Position: Project Manager, Limerick Generating Station

1. Functions, Responsibilities and Authority

Responsible for the overall administration and coordination involved in the engineering, design, procurement and construction effort within the Company of the Limerick Generating Station.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. Master of Science in Mechanical Engineering.
- c. General Electric Co. Seminar on BWR Fundamentals.
- d. General Electric Co. BWR Simulator Course - Fundamentals of BWR Operation.
- e. PECO Course on Fundamentals of Nuclear Power.
- f. Licensed professional engineer.

3. Work Experience

- a. Project Manager, Limerick Generating Station, 1968-present. \*
- b. Project Manager, Keystone Station, 1967-68.
- c. Assistant to Project Manager, Keystone Station, 1966-67.
- d. Various positions in the Mechanical Engineering Division, 1955-1966.
- e. Various positions in the Electrical Engineering Division, 1952-1955.

\* Directly-related nuclear experience.

Position: Resident Project Manager, San Francisco

1. Functions, Responsibilities and Authority

Establishing and maintaining the PECO "presence" in the architect/engineer/constructors home office for activities associated with Limerick Generating Station and Peach Bottom Atomic Power Station.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Courses in Elements of Atomic Power, Atomic Power Reactors and ASME Nuclear Power Plant Components.
- c. Licensed professional engineer.

3. Work Experience

- a. Resident Project Manager at Bechtel home office in San Francisco, 1978-present. \*
- b. Engineer in Charge, Quality Assurance Section (E&R Dept.) 1972-1978. \*
- c. Various supervisory and engineering positions in the Electrical Engineering Division, 1945-1972.

4. Other Experience

- a. Past Chairman, Quality Assurance Committee of Edison Electric Institute. \*
- b. Member Atomic Industrial Forum Committee on Reactor Design Construction and Operation. \*
- c. Member, ASME Nuclear Codes and Standards Committee and ASME Main Nuclear Quality Assurance Committee. \*

\* Directly-related nuclear experience.

Position: Project Manager

1. Functions, Responsibilities and Authority

Directs a special project in the field of nuclear power with the goal of providing recommendations to management which will be important to nuclear safety and reliability of service. Coordinates work of other engineers of various disciplines, represents the company in interactions with other utilities and with the Nuclear Safety and Analysis Center, and makes periodic reports to management.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering
- b. Master of Science in Electrical Engineering
- c. Oak Ridge School of Reactor Technology Certificate
- d. General Electric BWR Simulator Course
- e. General Electric Nuclear Technology Course
- f. Oak Ridge National Laboratories Reactor Operations Division - Operator Training
- g. Operator Training at Saxton plant

3. Work Experience

- a. Project Manager - Special Project, 1979-present. \*
- b. Project Manager - Gas Cooled Reactor Associates, 1978-79. \*
- c. Assistant Engineer in Charge - Nuclear Section, 1976-77. \*
- d. Project Manager - Fulton Generating Station, 1972-75. \*
- e. Supervising Engineer - Nuclear Section, 1969-71. \*
- f. Supervising Engineer - Station Operating, 1968. \*
- g. Various supervisory positions at Peach Bottom Atomic Power Station, 1963-68. \*
- h. In training for Peach Bottom Atomic Power Station at Oak Ridge National Laboratories, General Atomic and Saxton, 1960-63. \*
- i. Various positions in Station Operations, 1952-1960. \*

\* Directly-related nuclear experience.



ENGINEERING AND RESEARCH DEPARTMENT

ELECTRICAL ENGINEERING DIVISION



Position: Chief Electrical Engineer

1. Functions, Responsibilities and Authority

Responsible for the management and functioning of the Electrical Engineering Division whose principle task is the engineering work necessary to design, construct, and maintain Company electrical facilities and equipment.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Master of Science in Electrical Engineering.
- c. Nuclear Power Engineering Course 1973.
- d. Licensed professional engineer.

3. Work Experience

- a. Chief Electrical Engineer, 1976 - present. \*
- b. Assistant Chief Electrical Engineer - 3 years. \*
- c. Engineer in Charge Station Equipment and Field Engineering Section - 2 years. \*
- d. Engineer in Charge Transmission & Distribution Engineering Section - 2 years. \*
- e. Assistant Engineer in Charge Transmission & Distribution Engineering Section - 5 years.
- f. Various supervisory and engineering positions in the Electrical Engineering Division, 1937 - 1963.
- g. Member Operation and Safety Review Committee for Peach Bottom Units 2 and 3. \*

4. Other Experience

- a. Member EEI Electrical Systems and Equipment Committee, 1976 - present.
- b. Member ASTM Committee B-1, Wires for Electrical Conductors - 1957 - present and chairman, 1968 - 1972.
- c. Member EEI Transmission and Distribution Committee - 7 years.

\* Directly-related nuclear experience.

Position: Assistant Chief Electrical Engineer

1. Functions, Responsibilities and Authority

Under the direction of the Chief Electrical Engineer or in that individual's absence, is responsible for the management and functioning of the Electrical Engineering Division whose principle task is the engineering work necessary to design, construct, and maintain Company electrical facilities and equipment.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Licensed professional engineer.

3. Work Experience

- a. Assistant Chief Electrical Engineer, 1976 - present. \*
- b. Engineer in Charge Computer & Controls Section - 1 year. \*
- c. Engineer in Charge Station Equipment & Field Engineering Section - 2 years. \*
- d. Assistant Engineer in Charge Transmission and Distribution Engineering Section - 4 years.
- e. Various supervisory and engineering positions in the Electrical Engineering Division, 1944 - 1968.

4. Other Experience

- a. Member EEI Transmission and Distribution Committee - 4 years.
- b. Chairman EEI working group for Underground Cable Systems and Computerized Cable Operating Reports - 2 years.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Station Engineering Section

1. Functions, Responsibilities and Authority

Responsible for the supervision and functioning of the Station Engineering Section, whose principal task is the engineering work necessary to design, construct and maintain the electrical facilities in substations, nuclear, fossil fueled and hydro generating stations, steam heat and gas installations.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering (Power).
- b. Westinghouse Advanced School in Electric Utility Engineering, Pittsburgh, PA (12 weeks).
- c. P. E. Co. Nuclear Power Engineering Course - 1973.

3. Work Experience

- a. Engineer in Charge, 1971 - present. \*
- b. Engineering in Charge, Station Equipment & Field Engineering Section, 1970-1971. \*
- c. Assistant Engineer in Charge, Station Equipment & Field Engineering Section, 1968-1970. \*
- d. Various supervisory and engineering positions in the Electrical Engineering Division, 1946-1968.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Field Engineering Section

1. Functions, Responsibilities and Authority

Directs the Field Engineering Section whose principal function is inspection, testing, and initial operation to ensure the safe and correct performance of electrical equipment installed in generating stations, substations, steam heat and gas projects. A secondary function is to assist Electric Production and T&D Departments in investigation of equipment malfunctions or failures.

2. Educational Background

- a. Bachelor of Engineering in Electrical Engineering.
- b. Graduate courses in Electrification of Plants, Transmission Lines, Power System Stability.
- c. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, 1978 - present. \*
- b. Assistant Engineer in Charge, 1970-1978. \*
- c. Various supervisory and engineering positions in the Electrical Engineering Division, 1948 - 1970.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Transmission & Distribution Engineering Section

1. Functions, Responsibilities and Authority

Responsible for the supervision and functioning of the Transmission and Distribution Engineering Section, whose principal task is the design of transmission facilities at voltages of 66 kV to 500 kV and the layout of subtransmission and distribution lines at 33 and 13.2 kV.

2. Educational Background

- a. Bachelor of Engineering.
- b. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge and Assistant Engineer in Charge, 1973 - present.
- b. Supervising engineer, underground equipment branch - 5 years.
- c. Various engineering and supervisory positions in the Electrical Engineering Division - 20 years.

4. Other Experience

- a. Member IEEE insulated conductors committee and chairman of task force on test program administration.
- b. Member IEEE - NPEC ad hoc coordinating committee on cable systems fire standards and tests.
- c. Member ASA sectional committee and technical committee on weather proof wire and cable.

Position: Engineer in Charge, Computer and Controls Section

1. Functions, Responsibilities and Authority

Supervises and directs the Computer and Controls Section whose principal function is engineering design, development, evaluation and application of control instrumentation, monitoring and protective relay systems for nuclear and fossil fueled generating stations, substations, power system operation, steam heat and gas installations.

2. Educational Background

Bachelor of Science in Electrical Engineering.

3. Work Experience

- a. Engineer in Charge, 1975 to date. \*
- b. Assistant Engineer in Charge, 1968-1975. \*
- c. Various supervisory and engineering positions in Electrical Engineering Division, 1946-1968.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Electrical Equipment Section

1. Functions, Responsibility and Authority

Responsible for the supervision and functioning of the Electrical Equipment Section whose principal task is the preparation of specifications for major electrical equipment used in substations, generating stations, steam heat and gas installations and the preparation of construction standards and material specifications for equipment used in the underground and overhead transmission and distribution systems.

2. Educational Background

Bachelor of Science in Electrical Engineering.

3. Work Experience

- a. Engineer in Charge, 1979 to present. \*
- b. Various supervisory and engineering positions in the Electrical Engineering Division, 1955-1979.

\* Directly-related nuclear experience.

ENGINEERING AND RESEARCH DEPARTMENT

SYSTEM PLANNING DIVISION

3-27

696 201



Position: Chief System Planning Engineer

1. Functions, Responsibilities and Authority

Responsible for the supervision and functioning of the System Planning Division whose primary task is to determine the need, type, general location, and timing of major new or replacement facilities required to maintain and expand the electric, gas, and steam systems of the Company.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering
- b. Master of Science in Electrical Engineering.
- c. Licensed professional engineer.

3. Work Experience

- a. Chief System Planning Engineer, 1971-present.
- b. Assistant Chief System Planning Engineer, 1970-71.
- c. Engineer-in-Charge, Generation & Transmission Section, 1964-71.
- d. Branch Head (Several Branches), 1968-64.
- e. Engineer in System Planning Division, 1950-58.
- f. Westinghouse Electric Company, 1948-1950.

Position: Assistant Chief System Planning Engineer

1. Functions, Responsibilities, and Authority

Assists the Chief System Planning Engineer in the supervision and functioning of the System Planning Division whose primary task is to determine the need, type, general location, and timing of major new or replacement facilities required to maintain and expand the electric, gas, and steam systems of the Company.

2. Educational Background

- a. Bachelor of Science in Engineering.
- b. Master of Science in Electrical Engineering.
- c. Nuclear training, operating, Shippingport Atomic Plant, six months, (1959).\*
- d. Licensed professional engineer.

3. Work Experience

- a. Assistant Chief System Planning Engineer, 1974-present.
- b. Various supervising responsibilities, System Planning Division, 1958-1974.
- c. System Planning engineering activities, 1950-58.

4. Other Experience

- a. Chairman, System Planning Committee, Pennsylvania Electric Association.
- b. Chairman, IEEE Philadelphia Group, Power Systems Engineering.
- c. Member, Electric Power Research Institute ESE&C Divisional Committee.
- d. Member, Pennsylvania Energy Park Site Selection Task Force.
- e. Member, Delaware Valley Regional Planning Commission Year 2000 Land Use, Housing and Open Space Commission.

\*Directly related nuclear experience.

Position: Engineer-in-Charge, Services and Cost Section

1. Functions, Responsibilities, and Authority

Supervises the Services and Cost Section whose function is the estimating of system peak loads, providing technical problem programming support and the compilation and publishing of the annual Construction Budget and nine-year Forecast.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Master of Science in Business Administration.
- c. Licensed professional engineer

3. Work Experience

- a. Engineer in Charge, 1974 to present.
- b. Branch Head for 10 years in Distribution System Planning.
- c. Engineer for 8 years in Distribution System Planning.
- d. United States Army 2 years - Research project on Radar Controlled Air Defense System.
- e. Engineer for 3 years in electrical design for commercial ships at a private shipbuilding company.

Position: Engineer-in-Charge, Planning Section

1. Functions, Responsibilities, and Authority

Supervises the Planning Section whose function is the engineering work required for the determination of company requirements for land, electric, and district steam generation facilities, major transmission substations, and lines, distribution substations and lines, and district steam transmission facilities; and the solving of problems arising from production, transmission and distribution system operations, service interruptions, or maintenance outages.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Graduate Courses (24 credits) in Electrical Engineering.
- c. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, 1971 to present.
- b. Branch Head for 5 years in Generation & Transmission Planning
- c. Engineer for 15 years in Generation, Transmission and Distribution Planning.

ENGINEERING AND RESEARCH DEPARTMENT

CONSTRUCTION DIVISION

Position: General Superintendent - Construction

1. Functions, Responsibilities and Authority

Responsible for the operation and performance of the Construction Division whose principal function is to install, modify and repair electric, gas, steam, and general plant facilities of the Philadelphia Electric Company.

2. Educational Background

- a. Diploma - Electrical Engineering.
- b. PECO Course on Fundamentals of Nuclear Power.

3. Work Experience

- a. General Superintendent, 1970 to present.\*
- b. Assistant General Superintendent, 1966 to 1970.\*
- c. Assistant to General Superintendent, 1966.
- d. Supervisor of Engineers, 1965 to 1966.
- e. Various positions in the Construction Division, 1937 to 1965.

\*Directly-related nuclear experience.

Position: Assistant General Superintendent - Construction

1. Functions, Responsibilities, and Authority

Responsible for assisting in the operation and performance of the Construction Division whose principal function is to install, modify and repair electric, gas, steam and general plant facilities of the Philadelphia Electric Company as directed by the General Superintendent.

2. Educational Background

- a. Bachelor of Science in Civil Engineering.
- b. PECO Course on Fundamentals of Nuclear Power.
- c. Licensed professional engineer.

3. Work Experience

- a. Assistant General Superintendent, 1970 to present.\*
- b. Superintendent - Mechanical Construction, 1968 to 1969.\*
- c. Assistant to Mechanical Superintendent, 1966 to 1968.
- d. Supervisor of Engineers, 1965.
- e. Various positions in the Construction Division, 1951 to 1965.

\*Directly-related nuclear experience.

Position: Superintendent - Electrical Construction Section

1. Functions, Responsibilities and Authority

Directs the employees of the Electrical Construction Section in their performance of electrical construction and other related work associated with the installation, rearrangement, reinforcement and rehabilitation of Company electric, gas and steam heating facilities, utility buildings, production plants and other structures, and their electrical operated equipment, apparatus and appurtenances.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. PECO course on Fundamentals of Nuclear Power.

3. Work Experience

- a. Superintendent - Electrical Construction, 1970 to Present.\*
- b. Assistant Superintendent - Electrical Construction, 1969 to 1970.
- c. Supervising Engineer - Generation and Substation Branch, 1966 to 1969.
- d. Engineer in charge of Substation Group, 1963 to 1966.
- e. Construction Project Engineer on numerous Fossil Fuel Generating Station and Substation Projects, 1948 to 1963.

\*Directly-related nuclear experience.



Position: Superintendent - Mechanical Construction Section

1. Functions, Responsibilities and Authority

Directs the employees of the Mechanical Construction Section in their performance of mechanical construction and other related work associated with the installation, rearrangement, reinforcement and rehabilitation of Company electric, gas and steam heating facilities, utility buildings, production plants and other structures, and their mechanical, electrical, hydraulic operated equipment, apparatus and appurtenances.

2. Educational Background

- a. Bachelor of Science in Civil Engineering.
- b. PECO course on Fundamentals of Nuclear Power.
- c. Licensed professional engineer.

3. Work Experience

- a. Superintendent - Mechanical Construction, 1975 to present.\*
- b. Assistant Superintendent - Mechanical Construction, 1974 to 1975.\*
- c. Construction Project Engineer for the Peach Bottom Atomic Power Plant, 1967 to 1974.\*
- d. Construction Project Engineer for the Muddy Run Pumped-Storage Plant, 1962 to 1967.
- e. Construction Project Engineer for Underground Gas Transmission Mains, 1961 to 1962.
- f. Construction Project Engineer on numerous substation, service building, and steam heating line projects, 1955 to 1961.

\*Directly-related nuclear experience.

Position: Project Manager - Construction

1. Functions, Responsibilities and Authority

Responsible for the overall field coordination, scheduling, quality control and cost control involved with the construction of any major generating facility.

2. Educational Background

- a. Bachelor of Science in Civil Engineering.
- b. Licensed professional engineer.

3. Work Experience

- a. Project Manager - Construction, Limerick Generating Station 1979 - present.\*
- b. Senior Engineer and Supervising Engineer - Construction, Limerick Generating Station, 1972-1979.\*
- c. Engineer - Construction, Peach Bottom Atomic Power Station during construction, 1971.\*
- d. Various engineering positions in the Construction Division including field construction activities at various fossil and hydro generating stations, 1957-1972.

\*Directly-related nuclear experience.

ENGINEERING AND RESEARCH DEPARTMENT

ENGINEERING DESIGN DIVISION

Position: Chief Design Engineer

1. Functions, Responsibilities, and Authority

Supervises the coordination of the Engineering Design Division as an integral part of the Engineering and Research Department and directs the Division in all of its related work which includes the design, detailing, and drafting associated with architectural, civil, structural, mechanical, electrical, and mapping disciplines.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Industrial Electronics at Penn State University.
- c. Computer Programming at LaSalle College.
- d. PECO. course on Fundamentals of Nuclear Power.
- e. BWR Technology - General Electric Video Tapes.

3. Work Experience

- a. Chief Design Engineer, 1978 to present.\*
- b. Assistant Chief Design Engineer, 1970-1978.\*
- c. Assistant Chief Drafting Engineer, 1969-1970.\*
- d. Supervisor, Wiring Diagram Section, 1966-1969.
- e. Squad Chief, Substations Branch, Wiring Diagram Section, 1959-1966.
- f. Alternate Member Operation and Safety Review Committee, Peach Bottom Units 2 & 3, 1978 to present.\*

4. Other Experience

- a. American National Standards Institute - ANSI Y32.2 Task Group - 18 years.
- b. Member, Institute of Electrical and Electronic Engineers Symbol Committee - 17 years.

\*Directly related nuclear experience.

Position: Assistant Chief Design Engineer

1. Functions, Responsibilities, and Authority

Responsible for assisting in the operation and performance of the Engineering Design Division whose principal function is the design, detailing and drafting associated with architectural, civil, structural, mechanical, electrical, and mapping disciplines. Also, maintains documentation of nuclear plants and coordinates development of related procedures.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. Master of Science in Mechanical Engineering.
- c. PECO. course on Fundamentals of Nuclear Power.
- d. BWR Technology - General Electric video tapes.
- e. Westinghouse PWR Seminar.
- f. Licensed professional engineer.

3. Work Experience

- a. Assistant Chief Design Engineer, 1978 - present.\*
- b. Supervising Engineer, Mechanical Engineering, 1969-1978.\*
- c. Various supervisory and engineering positions in the Mechanical Engineering Division, 1952-1969.

\*Directly related nuclear experience.

Position: Designer in Charge, Electrical Control Section

1. Functions, Responsibilities, and Authority

Oversees the functioning of the Electrical Control Section of the Engineering Design Division and directs wiring schematic diagramming and listing of associated electrical equipment for purchase.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. PECO. course on Fundamentals of Nuclear Power.
- c. Qualification of Safety Related Equipment for Nuclear Power Plants course at Drexel University.

3. Work Experience

- a. Designer in Charge, Electrical Control Section, 1975-present.\*
- b. Supervising Designer, Generating Stations Branch, 1970-1975.\*

\*Directly related nuclear experience.

Position: Designer in Charge, Electrical Design Section

1. Functions, Responsibilities, and Authority

Oversees the functioning of the Electrical Design Section of the Engineering Design Division and directs electrical designing, drafting work, detailing work and listing of associated electrical equipment for purchase.

2. Educational Background

Diploma in Electrical Engineering.

3. Work Experience

- a. Designer in Charge, Electrical Design Section, 1975-present.\*
- b. Designer in Charge Electrical Control Section, 1970-1975.\*
- c. Supervisor, Electrical Design Section, 1960-1975.\*

\*Directly related nuclear experience.

Position: Designer in Charge, Mechanical Design Section

1. Functions, Responsibilities, and Authority

Oversees the efficient functioning of the Mechanical Design Section of the Engineering Design Division and directs architectural, structural and mechanical designing, drafting and detailing work.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. PECO. course on Fundamentals of Nuclear Power.

3. Work Experience

- a. Designer in Charge, Mechanical Design Section, 1978-present.\*
- b. Supervising Designer, Architectural-Structural Branch, 1976-1978.
- c. Supervising Designer, Structural Branch, 1970-1976.

\*Directly related nuclear experience.



Position: Designer in Charge, Design Services Section

1. Functions, Responsibilities, and Authority

Oversees the efficient functioning of the Design Services Section of the Engineering Design Division and supervises the Graphics Branch which is involved in creating design drawings for nuclear plant modifications. Also, responsible for drawing control and filing for all Company projects.

2. Educational Background

Bachelor of Science in Business Administration.

3. Work Experience

- a. Designer in Charge, Design Services Section, 1973-present.\*
- b. Designer, 1970-1973.

\*Directly related nuclear experience.

ENGINEERING AND RESEARCH DEPARTMENT

RESEARCH AND TESTING DIVISION

Position: Director, Research and Testing Division

1. Functions, Responsibilities and Authority

Responsible for the administration and functioning of the Research and Testing Division, whose primary function is to initiate and conduct research projects to innovate or improve methods, procedures, and equipment which will provide continuity of energy supply (electricity, gas and steam), reduce operating costs, and improve safety in production, distribution, and utilization of energy.

2. Educational Background

- a. Bachelor of Science in Mechanical Engineering.
- b. Columbia University Graduate School of Business Executive Program in Business Administration.
- c. P. E. Co. course on Fundamentals of Nuclear Power.
- d. Licensed professional engineer.

3. Work Experience

- a. Director, Research and Testing Division, 1979-present. \*
- b. Assistant Director, Research Division, 1965-1978. \*
- c. Engineer in Charge, Gas Research Section, 1956-1965.
- d. Senior Engineer, Gas Operations, 1953-54.
- e. Member Operation and Safety Review Committee for Peach Bottom Units 2 & 3, 1972-1979. \*

\* Directly related nuclear experience.

Position: Assistant Director, Research and Testing Division

1. Functions, Responsibilities and Authority

Responsible for assisting in the administration and functioning of the Research and Testing Division, whose primary function is to initiate and conduct research projects to innovate or improve methods, procedures, and equipment which will provide continuity of energy supply (electricity, gas and steam), reduce operating costs, and improve safety in production, distribution, and utilization of energy.

2. Educational Background

- a. Bachelor of Electrical Engineering.
- b. Licensed professional engineer.

3. Work Experience

- a. Assistant Director, Research and Testing Division, 1979 to present. \*
- b. Engineer in Charge, Testing Section, 1978 to 1979. \*
- c. Assistant Engineer in Charge, Testing Section, 1976 to 1978.
- d. Supervising Engineer, Transmission, Electrical Engineering Division, 1975 to 1976.
- e. Supervising Engineer, High Voltage Substations, Electrical Engineering Division, 1973 to 1975.
- f. Supervising Engineer, Apparatus Branch, Electrical Engineering Division, 1966 to 1973.
- g. Various supervisory and engineering positions in the Electrical Engineering Division, 1946 to 1966.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Energy Distribution Research Section

1. Functions, Responsibilities and Authority

Responsible for the administration and functioning of the Energy Distribution Research Section, whose primary objectives are the pursuit of Company research projects and participation in industry research activities involving the improvement of energy distribution methods, systems, and equipment.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, 1975 - present.
- b. Various supervisory and engineering positions in Engineering and Research Department, 1956-75.

Position: Engineer in Charge, Energy Conversion Research Section

1. Functions, Responsibilities and Authority

Responsible for the administration and functioning of the Energy Conversion Research Section, whose primary objectives are the pursuit of Company research projects and participation in industry research activities involving the improvement of energy conversion methods, systems, and equipment.

2. Educational Background

- a. Bachelor of Science in Electrical Engineering.
- b. Miscellaneous graduate courses leading to Master of Science in Electrical Engineering.
- c. P. E. Co. course in nuclear reactor engineering, with emphasis on instrumentation and control.
- d. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, Energy Conversion Research, 1973 - present. \*
- b. Engineer in Charge, Electrical Research, 1961-73.
- c. Senior Engineer, Laboratory Testing, 1953-61. \*
- d. Various supervisory and engineering positions in Engineering and Research Department, 1952-59.

\* Directly-related nuclear experience.

Position: Engineer in Charge, Gas Research & Laboratory Tests Section

1. Functions, Responsibilities and Authority

Responsible for the administration and functioning of the Gas Research and Laboratory Tests Section whose primary function is to furnish testing, photographic, and minor maintenance services required for inspection, calibration, and/or reliable operation of mechanical, electrical, and electronic equipment used in energy production, generation, and distribution facilities, including associated control and monitoring systems, instruments and electrical protective devices. Also, to initiate and conduct research projects to innovate or improve methods and procedures which will provide continuity of gas supply, reduce operating costs, and improve safety in production, distribution and utilization of gaseous fuels.

2. Educational Background

- a. Bachelor of Science in Chemical Engineering.
- b. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, Gas Research and Laboratory Tests Section, 1979 to present.
- b. Engineer in Charge, Gas Research Section, 1969 to 1978.
- c. Staff Engineer, Gas Operations, 1963 to 1969.
- d. Senior Engineer, Gas Operations, 1955 to 1963.
- e. Engineer, Gas Production, 1949 to 1955.
- f. Engineering Assistant, Gas Production Dept., 1946 to 1949.

Position: Engineer in Charge, Station Tests Section

1. Functions, Responsibilities and Authority

Responsible for the administration and functioning of the Station Tests Section whose primary function is to furnish testing, and minor maintenance services required for inspection, calibration, and/or reliable operation of mechanical, electrical, and electronic equipment used in energy production, generation, and distribution facilities, including associated control and monitoring systems, instruments, and electrical protective devices.

2. Educational Background

- a. Bachelor of Electrical Engineering.
- b. Graduate courses in Control System Engineering and Nuclear Engineering.
- c. General Electric BWR Simulator Course - Fundamentals of BWR Operation.
- d. General Electric Nuclear Instrumentation Course.
- e. Licensed professional engineer.

3. Work Experience

- a. Engineer in Charge, 1979 - present. \*
- b. Various supervisory and engineering positions in the Research and Testing Division, 1975-1978. \*
- c. Branch Engineer, Susquehanna Tests Branch, Peach Bottom Atomic Power Station, 1968-1975. \*
- d. Assistant Project Engineer (Electrical) Peach Bottom Units 2 & 3, 1967-1968. \*
- e. Project Engineer (Electrical) Peach Bottom Unit 1, 1966-1968. \*
- f. Member Subcommittee 8 IEEE Nuclear Power Engineering Committee - 7 years and chairman - 4 years, 1973-Present. \*
- g. Member ISA Nuclear Power Plant Instrument Engineers Committee - 2 years and chairman - 2 years, 1974-1976. \*

\* Directly related nuclear experience.



Position: Engineer in Charge, System Tests Section

1. Functions, Responsibilities and Authority

Responsible for the administration and functioning of the System Tests Section whose primary function is to furnish testing, and minor maintenance services required for inspection, calibration, and/or reliable operation of mechanical, electrical, and electronic equipment used in energy production, generation, and distribution facilities, including associated control and monitoring systems, instruments, and electrical protective devices.

2. Educational Background

Bachelor of Science in Electrical Engineering.

3. Work Experience

- a. Engineer in Charge, 1979 - present.
- b. Supervising Engineer in charge of Communication, Plymouth and Relay Tests Branches in Testing Section, 1975-1979.
  - (1) Quality Assurance associated with Peach Bottom Units 2 & 3, 1978. \*
- c. Engineer in charge of Generating Relay Tests Branch, 1963-1975.
  - (1) Engineer in Charge of Peach Bottom Units 2 & 3 protective relay installation during construction, 1971-1975. \*
- d. Engineer in Charge of Substation Relay Tests Branch, 1959-1963.
- e. Various engineering positions, 1956-1959.
- f. Relay technician, 1949-1956.

\* Directly related nuclear experience

TABLE 4  
Management Resources  
Purchasing and General Services Department

Note: Position designation letter corresponds with designations on Figure 5, Purchasing and General Services Department

A. Position: Manager - Purchasing & Stores Department

1. Function, Responsibility and Authority

Administers the Purchasing & Stores Department which is responsible for the efficient and economic procurement and storage of materials, supplies, equipment, and services required in the performance of company functions.

2. Educational Background

- a. BS Civil Engineering
- b. College degree - Electrical Engineering
- c. US Naval Reserve - Radar training
- d. EEI Institute - Management course
- e. Purchasing Management - Business School

3. Work Experience

- a. Manager - Purchasing & Stores Department - 6 years
- b. Buyer - Purchasing Agent - 15 years
- c. Electric Superintendent - Transmission & distribution - 9 years
- d. Engineer - T & D Department - 8 years

4. Other Experience

- a. Chairman - Public Utility Buyers Group

TABLE 4 (cont'd)

B. Position: Purchasing Division - Purchasing Agent

1. Function, Responsibility and Authority

Directs and supervises the Purchasing Division which is responsible for the efficient and economic procurement of materials, supplies, equipment, and services required in the performance of company functions.

2. Educational Background

- a. BS - Engineering
- b. BS - Mechanical Engineering

3. Work Experience

- a. Purchasing Agent - 6 years
- b. Assistant Purchasing Agent - 7 years
- c. Buyer - Purchasing division - 9 years
- d. Mechanical Engineering Department - 1 year
- e. Engineer - Fossil Generating Stations - 11 years
- f. US Navy Engineering Officer
- g. Licensed Professional Engineer - Mechanical

TABLE 5  
Peach Bottom Atomic Power Station - Technical Staff

Note: Position designation number corresponds with designations on Figure 4, Peach Bottom Plant Staff. An asterisk identifies directly related nuclear experience.

(1) Position: Station Superintendent

1. Function

Supervise and direct the employees performing operating, engineering, maintenance, and all other associated work in the generating station.

2. Educational Background

- a. BS Electrical Engineering
- b. 5 Technical Graduate Level Courses completed
- c. Reactor Theory - 2 years at PECO.
- d. Reactor training at National Reactor Test Station - 9 months
- e. HTGR training at Gulf General Atomics - 6 months

3. Work Experience

- a. Station Superintendent at PBAPS Nos. 1, 2, & 3 - 8 years\*
- b. Assistant Station Superintendent at PBAPS Nos. 1, 2, & 3 - 3 years\*
- c. Plant Engineer at PBAPS No. 1 - 1 year\*
- d. Shift Reactor Engineer at PBAPS No. 1 HTGR - 5 years\*
- e. Test Engineer fossil generating station - 1 year
- f. Electrical Field Engineers - 4 years
- g. US Army Corps of Engineers - 6 months

4. Other Experience

- a. ANS Committee - 1 year\*
- b. EEI Nuclear Subcommittee - 4 years\*
- c. SLO PBAPS Unit 1 HTGR - 5 years\*
- d. Reactor Engineer (Operations) Material Test Reactor, Idaho Falls - 9 months\*

TABLE 5

(2) Position: Assistant Station Superintendent

1. Function

Reporting to the Station Superintendent, assist in supervising and directing the employees performing operation, engineering, maintenance, and all other associated work in the generating station.

2. Educational Background

- a. BS Chemical Engineering
- b. 3 semesters of graduate courses in nuclear power
- c. GE Company Nuclear Simulator (12 weeks)
- d. HTGR Training at Gulf General Atomics - 6 months

3. Work Experience

- a. Assistant Superintendent PBAPS Units 1, 2, & 3 - 8 years\*
- b. Manager of QA, Engineering & Research Department - 3 years\*
- c. Shift Reactor Engineer - Peach Bottom Unit 1 - 2 years\*
- d. Results Engineer - Peach Bottom Unit 1 - 3 years\*
- e. Test Engineer - fossil generating station - 3 years
- f. Operated E.T.R. at N.R.T.S. - 6 months\*
- g. SLO PBAPS Unit 1 - 4 years\*
- h. SLO PBAPS Units 2 & 3 - 6 1/2 years\*

TABLE 5

(3) Position: Engineer - Operations

1. Function

Plan the activities of the plant operating forces and coordinate them with work assignments of the technical staff, maintenance forces and contract labor groups to achieve productivity and reliable operation of the plant equipment.

2. Educational Background

- a. BS Mechanical Engineering
- b. BWR Simulator Training Program - General Electric (16 weeks)
- c. Nuclear Reactor Engineering course at University of Michigan

3. Work Experience

- a. Engineer - Operations - 2 years\*
- b. Results Engineer - Peach Bottom - 5 years\*
- c. Test Engineer - Peach Bottom - 5 years\*
- d. Engineer - fossil generating station - 1 year
- e. Senior Licensed Operator - Peach Bottom - 5 years\*

TABLE 5

(4) Position: Engineer - Technical

1. Function

Direct the work of the plant technical staff and coordinate work utilizing other company employees or outside contractors to implement jobs pertinent to the operation and testing of plant equipment.

2. Educational Background

- a. BS Electrical Engineering
- b. US Navy Officer Candidate School
- c. US Navy Nuclear Power Basic School
- d. GE Simulator BWR Training Program - 3 months

3. Work Experience

- a. Engineer - Technical, Units 2 & 3 BWR - 2 years
- b. Engineer - Operations, Units 2 & 3 BWR - 1/2 year
- c. Training Coordinator, Units 2 & 3 BWR - 1 1/2 years
- d. Engineer Administration, Units 2 & 3 BWR - 2 years
- e. Startup Coordinator, Units 2 & 3 BWR - 1 year
- f. Instrument and Controls engineer, Units 2 & 3 BWR - 2 years
- g. Test Engineer PBAPS Units 2 & 3 BWR - 9 years
- h. Test Engineer PBAPS Unit 1 HTGR - 1 year
- i. US Navy Fleet Operations & Command Duty Officer on USS Great Sitkin (DIG Prototype, GE PWR) qualified OOD - 2 years
- j. US Navy Reactor Officer on USS Bainbridge, GE PWR, Qualified EOOW - 3 years
- k. SLO, Peach Bottom Units 2 & 3 BWR - 5 years



TABLE 5

(5) Position: Engineer - Administrative

1. Function

Coordinate work associated with administrative clerical functions, review policy and work function of overall training activities, function directly in completing administrative and engineering type projects as determined by Station Superintendent or Generation Division/Nuclear Superintendent.

2. Educational Background

- a. BS Electrical Engineering
- b. Masters Business Administration - complete except for thesis.

3. Work Experience

- a. Engineer - Administrative - 3 years\*
- b. Training Coordinator PBAPS Units 2 and 3 - 6 years\*
- c. Training Coordinator PBAPS Unit 1 - 3 years\*
- d. Shift Reactor Engineer PBAPS Unit 1 HTGR - 5 years\*
- e. SLO Reactor Training - 1 year\*
- f. Engineering Division - specification group - 4 years
- g. Field Engineer - 4 years
- h. Engineer in Transmission and Distribution - 4 years
- i. SLO PBAPS Unit 1 HTGR - 5 years\*



TABLE 5

(6) Position: Engineer - Maintenance

1. Function

Direct the work of the maintenance technical staff and head janitors and coordinate work involving plant maintenance group, contract personnel, Stores Group, other Company employees or outside contractors pertinent to the operation and maintenance of plant equipment.

2. Educational Background

- a. BS Mechanical Engineering
- b. General Physics BWR Simulator Training
- c. GE BWR simulator Training

3. Work Experience

- a. Maintenance Engineer Units 2 & 3 - 2 years\*
- b. Results Engineer PBAPS Units 2 & 3 BWR - 7 years\*
- c. Instrument Mechanic fossil generating station - 10 years
- d. SLO Units 2 & 3 BWR - 1 1/2 years\*

TABLE 5

(7) Position: Supervising Engineer - Outage Manager

1. Function

Implement departmental policy relative to refueling outages, minimize total outage time, cost and replacement generation, determine priorities of work, direct planning activities, and control critical path activities.

2. Educational Background

- a. BS Mechanical Engineering
- b. HEW Course "Management of Radiation Accidents"
- c. Senior Reactor Training GE BWR Simulator

3. Work Experience

- a. Outage Manager - 2 years\*
- b. Technical Engineer - 2 years\*
- c. Maintenance Engineer PBAPS Units 2 & 3 BWR - 3 years\*
- d. Acting Shift Supervisor Unit 1 - 1 year\*
- e. Maintenance Engineer Unit 1 - 2 years\*
- f. Instrument and Controls Engineer Unit 1 - 1 year\*
- g. Test Engineer PBAPS Unit 1 HTGR - 1 year\*
- h. Test Engineer fossil generating station - 2 years
- i. Section Chief Service Engineer USAF - 3 years
- j. SLO PBAPS Unit 1 HTGR - 4 years
- k. SLO PBAPS Units 2 & 3 BWR - 3 years

TABLE 5

(8) Position: Results Engineer

1. Function

Supervise technical staff in performance of data collection and reporting to outside organizations; analyze data for plant performance monitoring; generate preop procedures, operating procedures, ST and RT procedures; aid NRC inspectors; generate NPC responses; and generate required reports.

2. Educational Background

- a. BS Mechanical Engineering
- b. One graduate course in Nuclear Reactor Engineering
- c. Reactor simulator course - GE BWR Dresden ( 1 week)

3. Work Experience

- a. Results Engineer PBAPS - 2 years\*
- b. Test Engineer PBAPS - 8 years\*
- c. SLO PBAPS - 3 years\*

TABLE 5

(9) Position: Engineer - Chemistry

1. Function

Supervise and administrate chemistry program; review procedures, audits, and reviews; oversee outage planning, data collection and reporting, new programs, and training.

2. Educational Background

- a. B.E. - Chemical Engineering
- b. Graduate courses (12 credits) Chemical Engineering
- c. Health Physics course given by General Physics Corporation (2 weeks)
- d. BWR Chemistry course given by General Electric Company (12 weeks)
- e. SLO Training Program given by General Physics Corporation (12 weeks)

3. Work Experience

- a. Direct Chemistry section at Peach Bottom (1 1/2 years)\*
- b. Directed Health Physics and Chemistry section at Peach Bottom (2 years)\*
- c. Engineer in Health Physics and Chemistry section at Peach Bottom (1 1/2 years)\*
- d. Startup Engineer - Peach Bottom (2 1/2 years)\*
- e. Fossil power plant and water treatment plant Engineer (1 1/2 years)
- f. Senior Licensed Operator - Peach Bottom\*

TABLE 5

(10) Position: Engineer - Health Physics

1. Function

Supervise and administrate Health Physics program; review procedures, audits, and reviews; oversee outage planning, data collection and reporting, new programs, and training; generate NRC responses.

2. Educational Background

- a. BS - Chemical Engineering
- b. Health Physics Introduction - General Physics Corporation (2 weeks)
- c. General Electric Company Radiological Engineering Program (12 weeks)

3. Work Experience

- a. Supervisor of Health Physics section - Peach Bottom - 1 1/2 years\*
- b. Supervising Engineer with Peach Bottom H.P. and Chemistry Group - 3 1/2 years\*
- c. Engineer at hydroelectric power station - 4 years
- d. NRC Senior Reactor Operator License\*
- e. Participated in environmental surveys at TMI emergency\*

TABLE 5

(11) Position: Engineer - Instrument and Controls Engineer

1. Function

Direct instrument technicians, outage planning, special projects, troubleshooting, training, and instrument maintenance; generate and review procedures; develop preventive maintenance program on instruments and controls; aid operators; research and implement plant modifications; and monitor instrument performance.

2. Educational Background

- a. BS Mechanical Engineering
- b. Completed 2 courses in environmental engineering
- c. Nuclear simulator course at TVA.

3. Work Experience

- a. Instrument and controls Engineer - 1/2 year\*
- b. Test Engineer PBAPS - 6 years\*
- c. Test Engineer fossil generating station - 1 1/2 years
- d. SLO - 1 1/2 years\*

TABLE 5

(12) Position: Reactor Engineer

1. Function

Monitor core performance, core management, load factor improvement, training, refueling management, computer programming, computer updating, computer management, computer troubleshooting, CRD performance; and generate RE and operating procedures.

2. Educational Background

- a. BS Mechanical Engineering
- b. Nuclear Engineering graduate work - 4 years
- c. General Electric Reactor Engineering Training Program - 3 weeks

3. Work Experience

- a. Reactor Engineer PBAPS - 1 year\*
- b. Reactor Engineer Assistant PBAPS - 2 years\*
- c. Test Engineer PBAPS Nos. 2 & 3 - 2 years\*
- d. Test Engineer PBAPS No. 1 HTGR - 2 1/2 years\*
- e. SLO - 1 1/2 years\*

TABLE 5

(13) Position: Quality Assurance Engineer

1. Function

Direct quality assurance activities, i.e., act as liaison between site and various auditing agencies; implement and monitor revisions in plants quality assurance program as required.

2. Educational Background

a. BS Mechanical Engineering

3. Work Experience

- a. Engineer Quality Assurance PBAPS - 2 years\*
- b. Instrument and Controls Engineer PBAPS - 1 month\*
- c. Assistant Maintenance Engineer - 1 year\*
- d. Test Engineer PBAPS Units 2 & 3 - 5 years\*
- e. Test Engineer PBAPS Unit 1 HTGR - 2 years\*
- f. Test Engineer fossil generating station - 2 years



TABLE 5

(14) Position: Staff Engineer (under Results Engineer)

1. Function

Perform trouble shooting; investigate and write LER's; perform special testing; follow modifications from development to conclusion; develop and implement the plant preventive maintenance program; assist Reactor Engineering during startups.

2. Educational Background

- a. BS - Electrical Engineering
- b. 9 credits toward Masters - Electrical Engineering

3. Work Experience

- a. Test Engineer PBAPS - 4 years\*
- b. Test Engineer fossil generating station - 1 year
- c. SLO\*

TABLE 5

(15) Position: Staff Engineer (under Results Engineer)

1. Function

Perform trouble shooting; investigate and write LER's; perform special testing, follow modifications from development to conclusion; develop and implement the plant preventive maintenance program; assist Reactor Engineering during startups.

2. Educational Background

a. BS - Mechanical Engineering

3. Work Experience

a. Test Engineer PBAPS - 3 1/2 years\*

b. Test Engineer fossil plant - 4 1/2 years

c. SLO at PBAPS\*

TABLE 5

(16) Position: Staff Engineer (under Results Engineer)

1. Function

Perform trouble shooting; investigate and write LER's; perform special testing; follow modifications from development to conclusion; develop and implement the plant preventive maintenance program; assist Reactor Engineering during startups.

2. Educational Background

- a. BS - Nuclear Engineering
- b. GE Company Reactor Engineer Computer Course
- c. GE Company EHC Training Seminar

3. Work Experience

- a. Test Engineer PBAPS - 1 year\*

TABLE 5

(17) Position: Staff Engineer (under Results Engineer)

1. Function

Perform trouble shooting; investigate and write LER's; perform special testing; follow modifications from development to conclusion; develop and implement the plant preventive maintenance program; assist Reactor Engineering during startups.

2. Educational Background

a. BS - Electrical Engineering

3. Work Experience

a. Assistant to Test Engineers PBAPS - 1 year\*

TABLE 5

(18) Position: Staff Engineer (under Results Engineer)

1. Function

Perform trouble shooting; investigate and write LER's; perform special testing; follow modifications from development to conclusion; develop and implement the plant preventive maintenance program; assist Reactor Engineering during startups.

2. Educational Background

a. BS - Nuclear Engineering

3. Work Experience

a. Test Engineer PBAPS - 1 year\*

TABLE 5

(19) Position: Staff Engineer (under Results Engineer)

1. Function

Perform trouble shooting; investigate and write LER's; perform special testing; follow modifications from development to conclusion; develop and implement the plant preventive maintenance program; assist Reactor Engineering during startups.

2. Educational Background

a. BS - Nuclear Engineering

3. Work Experience

- a. Core Management Assistant Engineer PBAPS - 3 years\*
- b. Reactor Engineer Assistant PBAPS - 2 years\*
- c. Test Engineer PBAPS - 1 year\*

TABLE 5

(20) Position: Staff Engineer (under Results Engineer)

1. Function

Perform trouble shooting; investigate and write LER's; perform special testing; follow modifications from development to conclusion; develop and implement the plant preventive maintenance program; assist Reactor Engineering during startups.

2. Educational Background

- a. BS - Mechanical Engineering
- b. GE Company Mark I EHC School (1 week)

3. Work Experience

- a. Test Engineer PBAPS - 1 year\*
- b. Test Engineer fossil generating plant - 1 year

TABLE 5

(21) Position: Staff Engineer (under Results Engineer)

1. Function

Distribute weekly ST and RT packages; review all ST's and RT's performed by the shift and other groups; provide assistance to Reactor Engineering during startup.

2. Educational Background

a. BS - Electrical Engineering

3. Work Experience

a. Test Engineer PBAPS - 2 1/2 years\*

b. Test Engineer fossil plant - 2 1/2 years



TABLE 5

(22) Position: Plant Chemist

1. Function

Assist Engineer-Chemistry; train technicians; review documentation, operations, and procedures; and schedule manpower.

2. Educational Background

- a. BA - Biology
- b. BWR Chemistry Course given by General Electric (12 weeks)
- c. Radiation Protection Course - University of Michigan (2 weeks)

3. Work Experience

- a. Health Physics and Chemistry Supervisor - Peach Bottom 2 & 3 (BWR) - 4 years\*
- b. Health Physics and Chemistry Supervisor - Peach Bottom 1 (HTGR) - 3 1/2 years\*
- c. Fossil power plant chemistry - 5 years

TABLE 5

(23) Position: Technical Assistant - Chemistry

1. Function

Schedule work, review analyses and procedures, and assist with staffing, QA program, fuel warranty reports, and sample stations.

2. Educational Background

- a. BS
- b. MS

3. Work Experience

- a. Teaching experience in the fields of radiochemistry and biomedical research

TABLE 5

(24) Position: Technical Assistant - Chemistry

1. Function

Responsible for obtaining samples, performing analyses, calibrating and repair of instrumentation, and performing ST's.

2. Educational Background

- a. BS - Dairy Husbandry
- b. MA - Education
- c. NSF Institute in Physics
- d. NSF Institute in Physical Science
- e. Health Physics Technician training program - Philadelphia Electric Company

3. Work Experience

- a. Dosimetry technician - Peach Bottom - 1 year\*
- b. Health Physics technician - Peach Bottom - 1 1/2 years\*
- c. Radiochemical Technical Assistant - 1 year\*

TABLE 5

(25) Position: Technical Assistant - Chemistry

1. Function

Responsible for obtaining samples, performing analyses, calibrating and repair of instrumentation, and performing ST's.

2. Educational Background

- a. Ordnance Officer Basic Course, and Chemical, Biological and Radiological Staff Officer Course - US Army Ordnance Center - April to October 1975
- b. Nuclear and Chemical Target Analysis Course - US Army Artillery Center - February 1976
- c. Chemical, Biological, and Radiological Element Operations Course - Ft. Meade, MD - June 1979
- d. Army correspondence courses in Radiological Safety

3. Work Experience

- a. Peach Bottom - Health Physics and Chemistry Technician - 2 years\*
- b. Army - Chemical officer with 101st airborne division - 2 years

TABLE 5

(26) Position: Technical Assistant - Chemistry

1. Function

Review calibrations and repair of instrumentation, review procedures, schedule work, and interface with other groups.

2. Work Experience

- a. Technician - Health Physics, Peach Bottom - 4 years\*
- b. Technician - Health Physics at Oyster Creek (BWR), Connecticut Yankee - Haddam Neck (PWR), and Surry (PWR) - 2 years\*

TABLE 5

(27) Position: Engineer - Health Physics

1. Function

Responsible for performing internal auditing, procedure reviews, and special projects, acting as administrative assistant and assisting in training.

2. Educational Background

- a. BS - Biology, Chemistry minor
- b. MS - Radiological Health
- c. GE BWR Radiological Engineering Program - Valecitos

3. Work Experience

- a. Health Physics Engineer - Peach Bottom - 2 years  
(dosimetry, emergency planning, respiratory protection, ALARA development) \*

TABLE 5

(28) Position: Supervisor - Health Physics

1. Function

Responsible for performing review of procedures and documentation, manpower scheduling, ALAPA meetings, and general supervision.

2. Educational Background

- a. Pre-medical college courses (118 semester hours)
- b. US Army Engineers Reactors group - Nuclear Power Plant Operators course
- c. Reactor Chemistry Training Program - GE Vallecitos (3 months)

3. Work Experience

- a. Health Physics Supervisor - Peach Bottom Units 2 & 3 (BWR) - 6 years\*
- b. Health Physics Supervisor - Peach Bottom Unit 1 (HTGR) - 8 years\*
- c. US Army Engineers Reactors Group - Health Physicist - 3 years (Involved with decommission of PM-2A at Camp Century, Greenland)\*

TABLE 5

(29) Position: Supervisor - Health Physics

1. Function

Responsible for implementing health physics program, reviewing documentation, and assisting with plant staffing.

2. Educational Background

- a. US Navy Nuclear Power School
- b. US Navy ELT School
- c. US Navy Machinist Mate School
- d. US Navy Sub School

3. Work Experience

- a. Dosimetry supervisory experience at TMI during the emergency (1 week)\*
- b. Dosimetry Supervisor - Peach Bottom - 3 years\*
- c. Health Physics technician - Peach Bottom - 5 years\*
- d. US Navy Engineering Laboratory Technician



TABLE 5

(30) Position: Supervisor - Health Physics

1. Function

Responsible for performing manpower scheduling, rounds, documentation review, general supervision, and acting as interface with other groups.

2. Educational Background

- a. US Navy Nuclear Power School
- b. US Navy Prototype School
- c. US Navy Engineering Laboratory Technician School
- d. Radiation Protection Course - Ann Arbor, Michigan

3. Work Experience

- a. Health Physics Supervisor - Peach bottom (BWP) - 3 years\*
- b. Health Physics technician - Peach Bottom Units 2 & 3 (BWR) - 3 years\*
- c. Health Physics technician - Peach Bottom Unit 1 (HTGR) - 2 years\*
- d. US Navy Mechanical Operator and Health Physics Technician (ELT) - 6 years\*

TABLE 5

(31) Position: Technical Assistant - Health Physics

1. Function

Responsible for performing outage planning and special projects and assisting area supervisor during outage.

2. Educational Background

- a. Metallurgical Vocational training
- b. GE BWR training

3. Work Experience

- a. Health Physics Supervisor - Peach Bottom\*
- b. Chem Nuclear Corporation - Health Physics technician (BWR and PWR) \*
- c. General Electric Company - Health Physics technician (BWP) \*
- d. Health Physics technician at TMI during emergency

TABLE 5

(32) Position: Technical Assistant - Health Physics

1. Function

Responsible for implementing health physics program, reviewing documentation, and assisting with plant staffing.

2. Educational Background

- a. Two year college degree - Electro-Mechanical Engineering Technology
- b. US Navy Nuclear Power School
- c. US Navy Prototype Training
- d. US Navy Engineering Lab Tech School

3. Work Experience

- a. Health Physics Supervisor - Peach Bottom\*
- b. Health Physics technician - Oconee Plant (PWR)
- c. US Navy - ELT, Mechanical Operator/Supervisor (PWR)\*
- d. Health Physics technician - environmental monitoring team during TMI emergency\*
- e. Health Physics technician at Temple University Research Center and Hospital - 3 years\*

TABLE 5

(33) Position: Technical Assistant - Health Physics

1. Function

Responsible for performing routine and PWP surveys, performing special escorts and surveys, and acting as control point monitors.

2. Educational Background

- a. College courses - chemistry (3 years)

3. Work Experience

- a. Health Physics Crewleader - Peach Bottom - 4 years (participated in off-site survey teams during TMI emergency) \*
- b. Quality Control Analyst - 2 years\*
- c. Process Control Analyst - 2 years\*
- d. Health Physics Technician - Nuclear Fuel Services - 2 years\*

TABLE 5

(34) Position: Technical Assistant - Health Physics

1. Function

Responsible for performing routine and PWP surveys, performing special escorts and surveys, and acting as control point monitors.

2. Educational Background

- a. Two-year college degree - Nuclear Engineering Technology
- b. Reactors and Health Physics course - Pennsylvania State University - 10 weeks

3. Work Experience

- a. Health Physics technician - Peach Bottom - 5 years\*

TABLE 5

(35) Position: Technical Assistant - Health Physics

1. Function

Responsible for dosimetry QA and QC, training, documentation review, and clerk and body count tech scheduling.

2. Educational Background

- a. One year college
- b. US Navy Schools: Machinist Mate "A" Basic Engineering School; Nuclear Power School; Nuclear Prototype Training (S3G PWR); Engineering Laboratory Technician School (PWR); Submarine School; Quality Assurance School

3. Work Experience

- a. Health Physics Area Supervisor - Peach Bottom - 2 years\*
- b. Dosimetry technical assistant - Peach Bottom - 1/2 year\*
- c. US Navy: Radiochemist and Health Physics technician (ELT), Mechanical Operator (qualified to engine room supervisor), QA inspector.\*

TABLE 5

(36) Position: Technical Assistant - Health Physics

1. Function

Responsible for evaluation of respirator usage, control of respirator maintenance, and review of the ALARA program.

2. Educational Background

- a. BA - English; minor - environmental science
- b. US Navy Nuclear Training School
- c. Registered NRRPT

3. Work Experience

- a. Health Physics technician - Peach Bottom Units 2 & 3 - 4 years (BWR). Responsibilities included development of respiratory protection program, radioactive material shipping procedures, ALARA program.\*
- b. Health Physics technician - Peach Bottom Unit 1 (HTGR) - 1 year\*
- c. US Navy - Engine Room Supervisor and lead Health Physics technician (ELT) - 1 year at S3G PWR Plant\*
- d. US Navy - Mechanical Operator and Health Physics technician (ELT) at S3G PWR Plant - 3 years\*

TABLE 5

(37) Position: Staff Engineer (Under I & C Engineer)

1. Function

Administer instrument surveillance test procedures; direct daily instrument lab functions; perform initial screening and investigation of Maintenance Request Forms; perform instrument loop trouble shooting.

2. Educational Background

a. BS - Electrical Engineering

3. Work Experience

a. Test Engineer PBAPS - 2 years\*



TABLE 5

(38) Position: Staff Engineer (under Reactor Engineer)

1. Function

Responsible for monitoring CRD performance, startups, rod sequencing, training, reviewing and preparing procedures, monitoring core performance, and performing ST's.

2. Educational Background

a. BS - Nuclear Engineering

3. Work Experience

a. Assistant Reactor Engineer - 1 year\*

b. Worked at Advanced Test Reactor Site in Idaho - 3 years\*

TABLE 5

(39) Position: Staff Engineer (under Reactor Engineer)

1. Function

Responsible for outage planning and scheduling, including rewriting, revising and reviewing procedures; preparing core sequence movement sequence; directing outage setup; and interfacing with vendors.

2. Educational Background

a. BS - Nuclear Engineering

3. Work Experience

a. Reactor Engineer assistant FBAPS - 1 year\*

TABLE 5

(40) Position: Staff Engineer (Plant Modifications)

1. Function

Research and coordinate modification changes including procedure, drawings, preoperational tests, and reports.

2. Educational Background

- a. BS - Electrical engineering
- b. Graduate School - MBA

3. Work Experience

- a. Engineer, Peach Bottom - recently employed
- b. Engineering assistant with Maintenance and Test Engineering groups, Peach Bottom - 1 year

TABLE 5

(41) Position: Staff Engineer (under QA Engineer)

1. Function

Investigate quality assurance deficiencies, revise procedures , investigate audit deficiencies, expedite parts procurement, perform audits, and act as Plant Safety Chairman.

2. Educational Background

a. Bs - Nuclear Engineering

3. Work Experience

a. New Engineer

TABLE 5

(42) Position: Training Coordinator

1. Function

Prepare, administer, and coordinate training programs, instruct math, physics and chemistry in operations training, and arrange for contractor support.

2. Educational Background

- a. BS - Biology
- b. Master in Education

3. Work Experience

- a. Training Coordinator PBAPS - 2 years
- b. Secondary school teacher - 8 years

TABLE 5

(43) Position: Instructor - Training

1. Function

Schedule operations training; supervise and schedule general training programs; supervise and instruct licensed operator training, non-licensed operator training, and first aid; and supervise and schedule requalification program.

2. Educational Background

- a. Chemical Technology - AAS
- b. BS - Chemistry
- c. US Army Chemical Laboratory School

3. Work Experience

- a. Health Physics technician - Peach Bottom (BWR) - 3 years\*
- b. Health Physics technician - Rochester Gas & Electric, Ginna Station - 1/2 year (PWR) \*
- c. US Army - Nuclear Defense Lab, Edgewood, Arsenal, MD - 4 years (radiochemistry, health physics, dosimetry experience) \*
- d. Participated on survey teams during TMI emergency\*

TABLE 5

(44) Position: Staff Engineer (under Engineer - Maintenance)

1. Function

Investigate maintenance problems, coordinate engineering department efforts, request and expedite parts, interfaces with vendors, expedite non-outage maintenance work.

2. Educational Background

- a. BS - Mechanical Engineering
- b. Nuclear Simulator Training at TVA

3. Work Experience

- a. Test Engineer PBAPS - 6 1/2 years\*
- b. SLO at PBAPS\*

TABLE 5

(45) Position: Staff Engineer (under Engineer - Maintenance)

1. Function

Establish priorities of station maintenance forces, investigate maintenance problems, perform spot inspections of maintenance work, attend maintenance planning meetings, and coordinate Engineering Department activities.

2. Educational Background

a. BS - Electrical Engineering

3. Work Experience

a. Test Engineer - Peach Bottom - 1 year\*

b. Test Engineer - fossil generating station - 1 year



TABLE 5

(46) Position: Staff Engineer (under Engineer - Maintenance)

1. Function

Administer preventive maintenance program, evaluate equipment failures, and investigate EA cost overruns.

2. Educational Background

a. BS - Mechanical Engineering

3. Work Experience

a. New Engineer

TABLE 5

(47) Position: Staff Engineer (under Outage Manager)

1. Function

Direct expense authorization preparation and work package preparation.

2. Educational Background

- a. BS - Electrical Engineering
- b. Navy Nuclear Power School
- c. Engineering Lab Tech School (Nuclear Chemistry and Health Physics)
- d. AE Reactor Engineer Training Program

3. Work Experience

- a. Test Engineer PBAPS 2 & 3 - 7 years\*
- b. Naval nuclear submarine power plant experience - 4 years\*
- c. Naval nuclear prototype experience - 1 year\*
- d. Conventional Navy submarine operational experience - 1 year
- e. SLO - 4 years\*

TABLE 5

(48) Position: Staff Engineer (under Outage Manager)

1. Function

Prepare work package in given area of responsibility, review work package status, schedule work packages with Planner Scheduler, monitor work progress, and monitor cost of job.

2. Educational Background

- a. US Naval Academy
- b. Masters - Business Administration
- c. US Navy Nuclear Power Training - certification for (PWR)
- d. Professional Engineer (Nuclear)

3. Work Experience

- a. GE Company Field installation engineering and BWR outage services - 10 years\*
- b. US Navy Nuclear Submarines - 6 1/2 years

TABLE 5

(49) Position: Staff Engineer (under Outage Manager)

1. Function

Prepare work package in given area of responsibility, review work package status, schedule work packages with Planner Scheduler, monitor work progress, and monitor cost of job.

2. Educational Background

a. BS - Electrical Engineering

3. Work Experience

a. Test Engineer PBAPS - 2 years\*

b. Environmental Engineering EPA - 1/2 year

TABLE 6  
OFFSITE TECHNICAL RESOURCES  
ELECTRIC PRODUCTION DEPARTMENT

	Maintenance Division	Fuels Division	Quality Assurance Division	Generation Division Fossil-Hydro	Generation Division Nuclear
1. Total Number (Managers, Engineers and Professional Personnel)	2 (F) 24 (P)	3 (N)	7 (F)	104 (N)	19 (F)
2. Educational Background					
a. BS - Electrical Engineering	5	1	4	26	1
b. BS - Mechanical Engineering	11	1	3	51	7
c. BS - Chemical Engineering	-	-	-	-	1
d. BS - Nuclear Engineering	-	-	-	-	4
e. BS - Civil Engineering	1	1	-	2	1
f. BS - Metallurgical Engineering	1	-	-	-	-
g. BS - Chemistry	-	-	-	1	-
h. BS - Physics	-	-	-	2	-
i. BS - Other Engineering Fields	-1	-	-	-	5
j. BS - Non-Engineering Fields	-	-	-	-	-
k. MS - Electrical Engineering	-	-	-	3	-
l. MS - Mechanical Engineering	1	-	1	2	5
m. MS - Other Engineering Fields	-	-	1	5	2
n. MS - Non-Engineering Fields	1	-	-	-	-
o. Associate Degree	2	-	-	24	-
p. GE - BWR Simulator Training	-	-	-	-	7
q. Licensed Professional Engineer	6	2	1	13	4
r. Previously Licensed - Senior Operators - BWR	-	-	1	-	6
s. Participation - Technical Standards Committee	-	-	-	1	4

\* Department Totals include Vice President and Manager

- (F) Full time nuclear participation  
(P) Part time nuclear participation  
(N) Not assigned but could be made available

TABLE 6  
OFFSITE TECHNICAL RESOURCES  
ELECTRIC PRODUCTION DEPARTMENT

	System Operating Division	Steam Heating Division	Services Division	Administration Division	Total Electric Production Department*
1. Total Number (Managers, Engineers and Professional Personnel)	17 (N)	7 (N)	4 (F) 11 (P) 20 (N)	3 (P)	32 (F) 40 (P) 175 (N)
2. Educational Background					
a. BS - Electrical Engineering	9	1	6	-	54
b. BS - Mechanical Engineering	1	5	8	1	89
c. BS - Chemical Engineering	-	-	2	-	3
d. BS - Nuclear Engineering	-	-	-	-	4
e. BS - Civil Engineering	-	1	1	-	7
f. BS - Metallurgical Engineering	-	-	-	-	1
g. BS - Chemistry	-	-	8	-	9
h. BS - Physics	1	-	1	-	4
i. BS - Other Engineering Fields	1	-	-	1	8
j. BS - Non-Engineering Fields	-	-	9	-	9
k. MS - Electrical Engineering	-	-	2	-	5
l. MS - Mechanical Engineering	1	1	1	-	12
m. MS - Other Engineering Fields	1	-	1	-	10
n. MS - Non-Engineering Fields	1	-	7	-	9
o. Associate Degree	-	1	5	-	32
p. GE - BWR Simulator Training	-	-	-	-	8
q. Licensed Professional Engineer	1	1	1	-	31
r. Previously Licensed - Senior Operators - BWR	-	-	-	-	7
s. Participation - Technical Standards Committee	-	-	5	-	11

\* Department Totals include Vice President and Manager

- (F) Full time nuclear participation  
(P) Part time nuclear participation  
(N) Not assigned out could be made available

696 279

TABLE 6  
ON-SITE TECHNICAL RESOURCES  
ELECTRIC PRODUCTION DEPARTMENT

	Maintenance Division	Fuels Division	Quality Assurance Division	Generation Division Fossil-Hydro	Generation Division Nuclear
3. Technical Experience (man-years)					
a. Nuclear Power Field	54	-	56	19	187
b. Engineering Management or Supervision	81	31	24	358	105
c. Total Utility Experience	404	48	142	1237	264
d. Reactor Physics	-	-	-	-	22
e. Health Physics	-	-	-	6	28
f. Nuclear Fuels Management	-	-	-	2	29
g. Radiochemistry	-	-	-	-	21
h. On-Site Nuclear Plant Operations	2	-	6	15	94
i. Computer Applications-Nuclear	4	-	1	-	32
j. Computer Applications-Non Nuclear	10	5	5	53	-
k. Design Engineering - Nuclear	11	-	-	16	20
l. Design Engineering - Non Nuclear	11	1	1	85	3
m. Quality Assurance/Control-Nuclear	20	-	21	21	12
n. Quality Assurance/Control-Non Nuclear	9	-	-	27	1
o. Maintenance - Nuclear	60	-	27	41	11
p. Maintenance - Non Nuclear	181	31	41	221	18
q. Chemistry - Nuclear	-	-	1	-	21
r. Chemistry - Non Nuclear	36	2	1	111	50

\* Department Totals include Vice President and Manager

TABLE 6  
OFFSITE TECHNICAL RESOURCES  
ELECTRIC PRODUCTION DEPARTMENT

	<u>System Operating Division</u>	<u>Steam Heating Division</u>	<u>Services Division</u>	<u>Administration Division</u>	<u>Total Electric Production Department*</u>
3. Technical Experience (man-years)					
a. Nuclear Power Field	1	1	5	15	345
b. Engineering Management or Supervision	51	11	123	28	853
c. Total Utility Experience	162	43	434	104	2899
d. Reactor Physics	-	-	-	-	22
e. Health Physics	-	-	15	-	49
f. Nuclear Fuels Management	-	-	-	-	31
g. Radiochemistry	-	-	11	-	32
h. On-Site Nuclear Plant Operations	-	1	1	-	119
i. Computer Applications - Nuclear	-	-	21	-	58
j. Computer Applications - Non Nuclear	33	2	117	-	229
k. Design Engineering - Nuclear	18	-	-	-	65
l. Design Engineering - Non Nuclear	-	-	3	-	118
m. Quality Assurance/Control-Nuclear	-	-	-	14	88
n. Quality Assurance/Control-Non Nuclear	-	-	-	28	66
o. Maintenance - Nuclear	-	-	4	-	145
p. Maintenance - Non Nuclear	27	7	89	14	629
q. Chemistry - Nuclear	-	-	11	-	33
r. Chemistry - Non Nuclear	22	6	123	-	351

\* Department Totals include Vice President and Manager



TABLE 7  
TECHNICAL STAFF (OFFSITE) AVAILABLE FOR NUCLEAR PLANT SUPPORT  
ENGINEERING AND RESEARCH DEPARTMENT

	Total Eng & Research Dept. *	Mechanical Engineering Division Including Quality Assurance	Electrical Engineering Division	System Planning Division	Construction Division	Engineering Design Division	Research and Testing Division
1. Total Number - Managers, Engineers & Professionals	483	110	158	40	40	69	64
2. Educational Background							
a. Bachelor Degrees							
B.S. Nuclear Eng.	3	3	-	-	-	-	-
B.S. Electrical Eng.	232	13	137	36	8	5	32
B.S. Mechanical Eng.	90	66	5	-	7	3	8
B.S. Civil Eng.	35	13	5	-	16	1	-
B.S. Engineering	12	3	2	2	3	1	1
B.S. Metallurgical Eng.	1	-	-	-	-	-	1
B.S. Metallurgy	2	1	-	-	-	-	1
B.S. Structures	1	1	-	-	-	-	-
B.S. Chemical Eng.	6	3	-	-	-	-	3
B.S. Chemistry	1	1	-	-	-	-	-
B.S. Fuel Technology	1	-	-	-	-	-	1
B.S. Electrical Technology	5	-	1	2	-	2	-
B.S. Physics	3	2	1	-	-	-	-
B.S. Biology	1	1	-	-	-	-	-
B.S. Marine Eng.	3	2	1	-	-	-	-
B.S. Business Administration	1	-	-	-	-	1	-
B.A. Math. & Computer Science	1	1	-	-	-	-	-
Bachelor of Arts	2	1	-	-	-	1	-
TOTAL BACHELOR DEGREES	400	111	152	40	34	14	47

\* Department Totals include Vice President and Manager

696 282

POOR ORIGINAL

POOR ORIGINAL

TABLE 7 (CONTINUED)  
TECHNICAL STAFF (OFFSITE) AVAILABLE FOR NUCLEAR PLANT SUPPORT  
ENGINEERING AND RESEARCH DEPARTMENT

	Total Eng & Research Dept. *	Mechanical Engineering Division Including Quality Assurance	Electrical Engineering Division	System Planning Division	Construction Division	Engineering Design Division	Research and Testing Division
2. (CONTINUED)							
b. Master Degrees							
M.S. Nuclear Eng.	3	3	-	-	-	-	-
M.S. Electrical Eng.	28	3	8	8	1	-	8
M.S. Mechanical Eng.	17	13	-	-	-	1	2
M.S. Civil Eng.	5	5	-	-	-	-	-
M.S. Engineering	4	-	1	1	1	-	1
M.S. Engineering Management	3	-	1	-	-	-	2
M.S. Systems Eng.	6	-	3	2	1	-	-
M.S. Chemical Eng.	2	1	-	-	-	-	1
M.S. Chemistry	1	1	-	-	-	-	-
M.S. Radiological Health	1	1	-	-	-	-	-
M.S. Applied Statistics	1	1	-	-	-	-	-
M.S. Environmental Science	3	3	-	-	-	-	-
Master of Science	1	-	1	-	-	-	-
Master of Business Admin.	12	2	1	4	3	-	2
TOTAL MASTER DEGREES	87	33	15	15	6	1	16
c. Doctorates							
Ph.D. - Systems Eng.	2	-	-	1	-	-	1
Ph.D. - Mech. Eng - Systems	1	-	-	-	-	-	1
TOTAL Ph.D.	3	-	-	1	-	-	2
d. Associate Degrees							
Mechanical Engineering Technology	4	4	-	-	-	-	-
Electrical Engineering Technology	6	1	2	-	-	3	-
A.B. Physics	1	-	-	-	-	-	1
TOTAL ASSOCIATE DEGREES	11	5	2	-	-	3	1
e. Licensed Professional Engineers	177	51	67	18	13	4	23

\* Department totals include Vice President and Manager

696 283

POOR ORIGINAL

TABLE 7 (CONTINUED)  
TECHNICAL STAFF (OFFSITE) AVAILABLE FOR NUCLEAR PLANT SUPPORT  
ENGINEERING AND RESEARCH DEPARTMENT

	Total Eng & Research Dept. *	Mechanical Engineering Division Including Quality Assurance	Electrical Engineering Division	System Planning Division	Construction Division	Engineering Design Division	Research and Testing Division
3. Technical Experience (in man-years)							
a. Engineering							
Nuclear Power Field	1345	558	319	2	150	118	160
Engineering Management or Supervisory	1704	377	327	160	191	189	410
Total Utility Experience	8444	1660	2606	742	574	1495	1298
b. Field - Nuclear Related							
Design Engineering	439	173	148	-	-	88	5
Maintenance	77	9	26	-	-	-	37
Construction	145	-	-	-	145	-	-
Structural	70	48	10	-	-	10	2
Metallurgical & Materials	62	28	9	-	-	4	21
Thermal-hydraulic	71	47	3	-	-	-	17
Systems Engineering	203	95	60	-	-	3	20
Chemistry	28	13	-	-	-	2	13
Radio Chemistry	29	3	-	-	-	3	2
Nuclear Fuels Management	82	62	-	-	-	-	-
Reactor Physics	81	42	2	-	-	3	4
Health Physics	108	58	3	-	-	6	6
Computer Applications	155	68	48	1	-	8	25
Instrument & Controls	333	52	80	-	-	50	141
Quality Assurance	203	109	37	1	-	4	45
Quality Control	61	-	-	-	61	-	-
On-site Nuclear Plant Operations	137	44	45	1	1	4	31

\* Department Totals include Vice President and Manager

696 284

TABLE 7 (CONTINUED)  
TECHNICAL STAFF (OFFSITE) AVAILABLE FOR NUCLEAR PLANT SUPPORT  
ENGINEERING AND RESEARCH DEPARTMENT

3. (CONTINUED)		Total Eng & Research Dept. *	Mechanical Engineering Division Including Quality Assurance	Electrical Engineering Division	System Planning Division	Construction Division	Engineering Design Division	Research and Testing Division
c. Field - Non-nuclear								
7-1	Design Engineering	3453	518	1568	35	-	1187	110
	Maintenance	637	68	-	-	-	66	478
	Construction	459	-	-	-	459	-	-
	Structural	293	92	73	-	-	118	10
	Metallurgical & Materials	314	54	65	-	-	40	155
	Thermal-hydraulic	252	90	22	-	-	13	121
	Systems Engineering	713	186	187	140	-	36	139
	Chemistry	183	14	-	-	-	5	149
	Computer Applications	142	30	50	-	-	12	50
	Instrumentation & Controls	885	103	234	13	-	330	206
	Quality Assurance	242	58	42	-	-	22	120
	Quality Control	19	-	-	-	19	-	-

\* Department Totals include Vice President and Manager

POOR ORIGINAL

696 285

TABLE 8  
Offsite Technical Resources - Purchasing Department

1. Total number (managers, engineers, and professional personnel)	2(F) 7(p)
2. Educational Background	
a. BS Electrical Engineering	5
b. BS Mechanical Engineering	4
c. BS Civil Engineering	1
d. MS Nuclear Physics	1
e. Licensed Professional Engineers	4
f. Participation - Technical Standards Committee	1
3. Work Experience (man-years)	
a. Nuclear Power Field	35
b. Engineering Management or Supervision	42
c. Total Utility Experience	226
d. On Site Nuclear Plant Operations	2
e. Computer Applications - nuclear	6
f. Computer Applications - non nuclear	17
g. Design Engineering - nuclear	15
h. Design Engineering - non nuclear	19
i. Quality Assurance/Control - nuclear	8
j. Quality Assurance/Control - non nuclear	8
l. Maintenance - nuclear	6
k. Maintenance - non nuclear	57
m. Nuclear Fuels Management	12

TABLE 9  
OUTSIDE COMPANIES PROVIDING TECHNICAL SUPPORT

Contractual arrangements exist between Philadelphia Electric Company and the following firms to provide technical support for our nuclear power plants.

1. Bechtel Power Corporation, San Francisco, CA

Type of Support: Engineering technical services relating to the nuclear steam supply systems and balance of plant systems at both the home office and at the plant site; also site construction management, maintenance and repair support.

Availability: Telephone call followed by formal written request to the Bechtel Project Manager and/or Project Engineer.

Contractual Arrangements: General Services Agreement, indefinite duration.

2. General Electric Company

Type of Support: Engineering technical services and materials procurement relating to the nuclear steam supply system and turbine-generator equipment; also site technical representation as requested.

Availability: Telephone call, followed by written purchase order, to:

- a. Service Manager, Installation and Service Engineering Division, Philadelphia, PA
- b. Product Services Engineer, San Jose, CA
- c. Project Manager, Nuclear Energy Products Division, San Jose, CA

Contractual Arrangements: Proposed Nuclear Services Contract (currently being processed), indefinite duration.

3. Catalytic, Inc.

Type of Support: Supplemental maintenance and construction support, and engineering technical services for all plant systems upon request.

Availability: Telephone call from site management personnel to the Bechtel Project Engineer.

Contractual Arrangements: Purchase Order (three year duration).

TABLE 9 (continued)  
Page 2

4. Radiation Management Corporation

Type of Support: Provide health physics and radiation instrumentation maintenance services. In addition, arrangements have been made for RMC to provide, on a 24-hour basis, a radiation emergency medical team to respond to accidents.

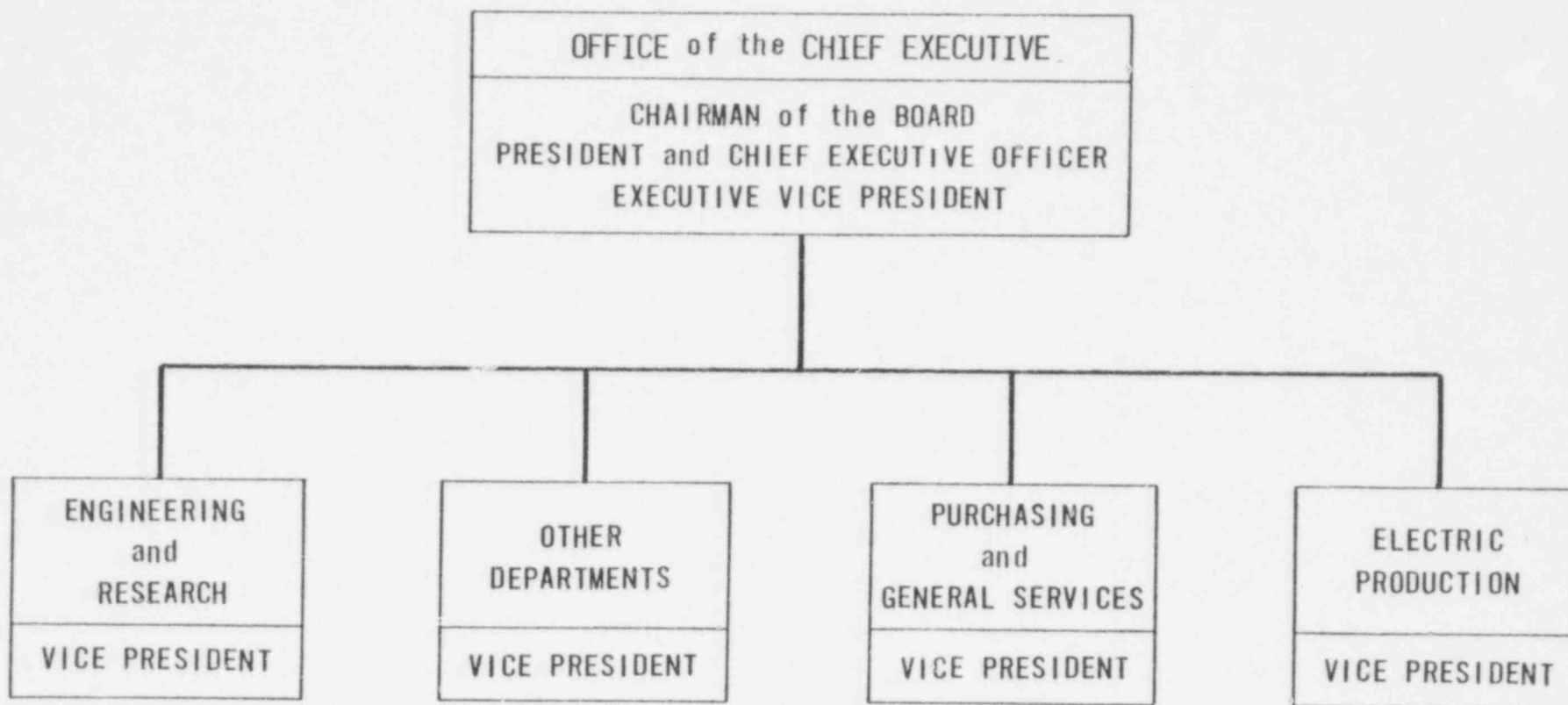
Availability: Telephone call from site management personnel.

Contractual Arrangement: Annual purchase order.

In addition to the above four companies, the consulting firms listed below could be called upon to provide consulting services, technical support or assistance in the specialty fields indicated. In emergency situations, their services would be available by telephone call, followed by a confirming written purchase order.

1. Dames and Moore, Cranford, NJ  
Seismology and geology.
2. Nuclear Associates International, Rockville, MD  
Core and Transient Analysis.
3. Radiation Management Corporation, Philadelphia, PA  
Environmental sample collection and analysis.
4. RMC - Ecology Division, Drumore, PA  
Environmental sample collection.
5. Interex Corporation, Natick, MA  
Environmental sample collection and analysis.
6. Teledyne Corporation, Westville, NJ  
Environmental sample analysis.
7. Meteorological Evaluation Services Corporation, Amityville, NY  
Analysis and dispersion estimates.
8. Eberline Instrument Corporation, Chicago, IL  
Effluent instrumentation.





EXECUTIVE ORGANIZATION  
PHILADELPHIA ELECTRIC COMPANY

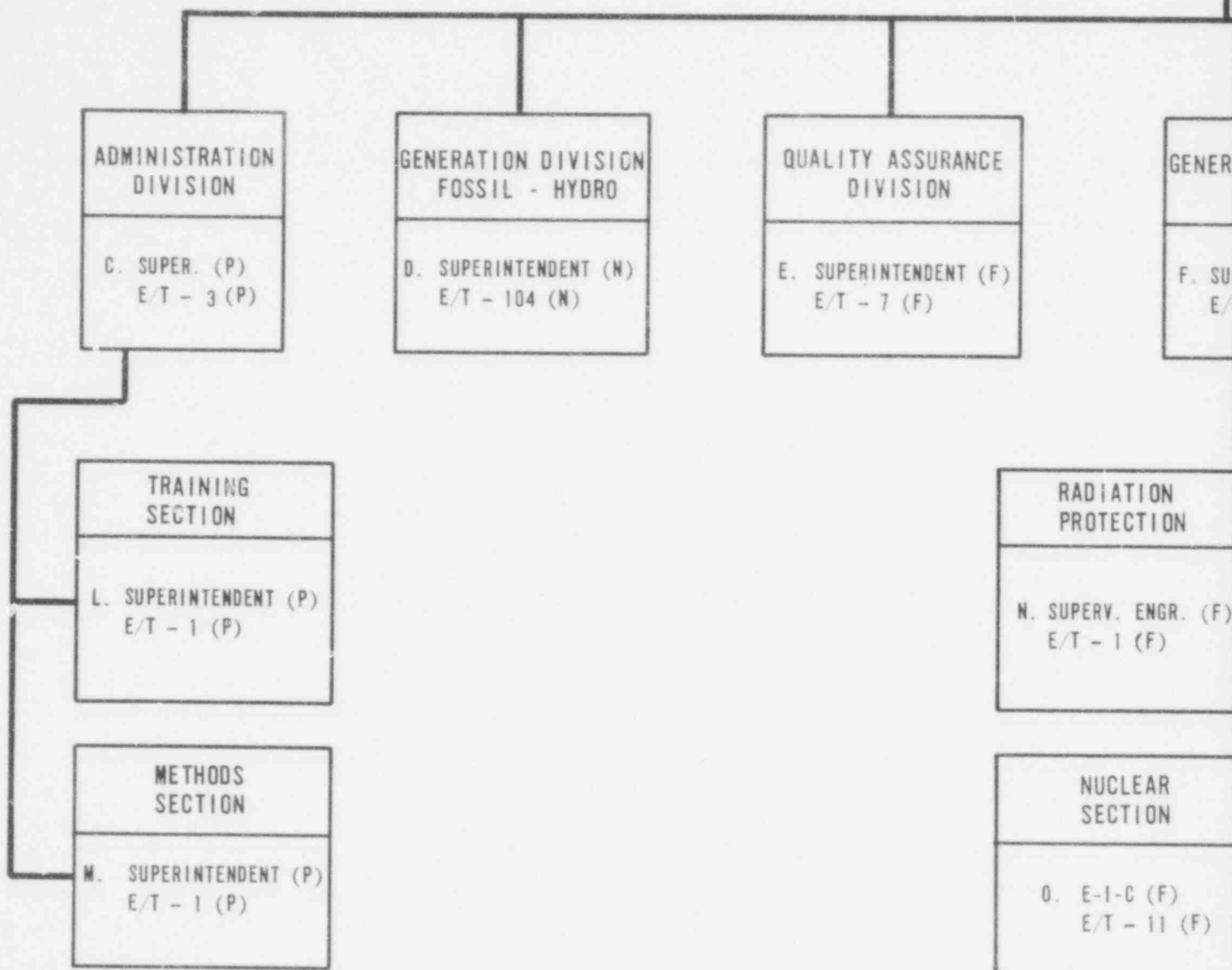
FIGURE 1



OFFICE of the

A. VICE P

B. MANAGE



E-I-C: ENGINEER IN CHARGE

SUPERV. ENGR.: SUPERVISING ENGINEER

E/T : NUMBER OF ENGINEERING-TECHNICAL PERSONNEL  
WORKING FOR THE DIVISION/SECTION, (ALL  
HAVE FORMAL COLLEGE EDUCATION).

(F) FULL TIME

(P) PART TIME

(N) NOT ASSIGNED BUT COULD BE MADE AVAILABLE

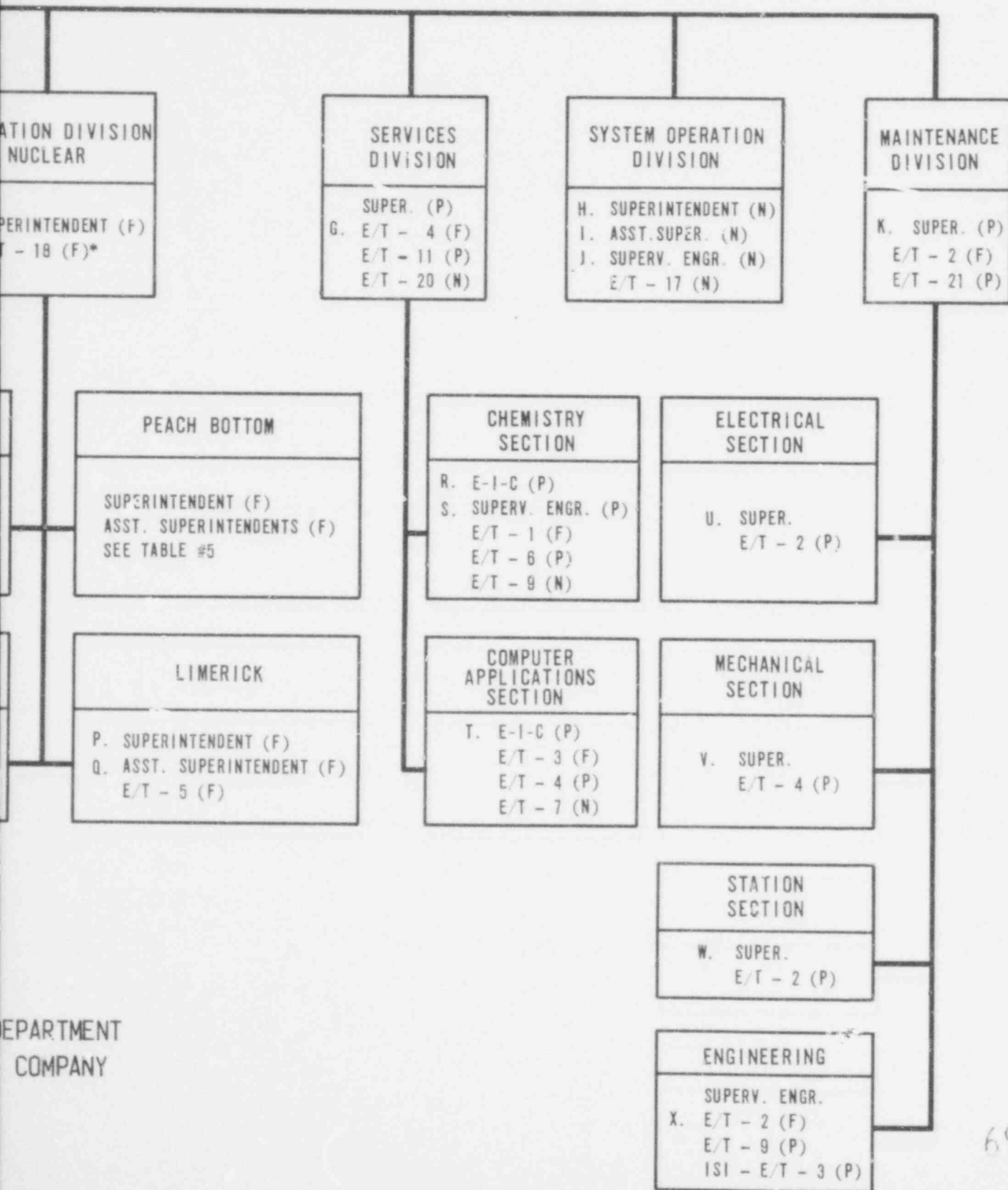
\* PEACH BOTTOM ON SITE PERSONNEL NOT INCLUDED

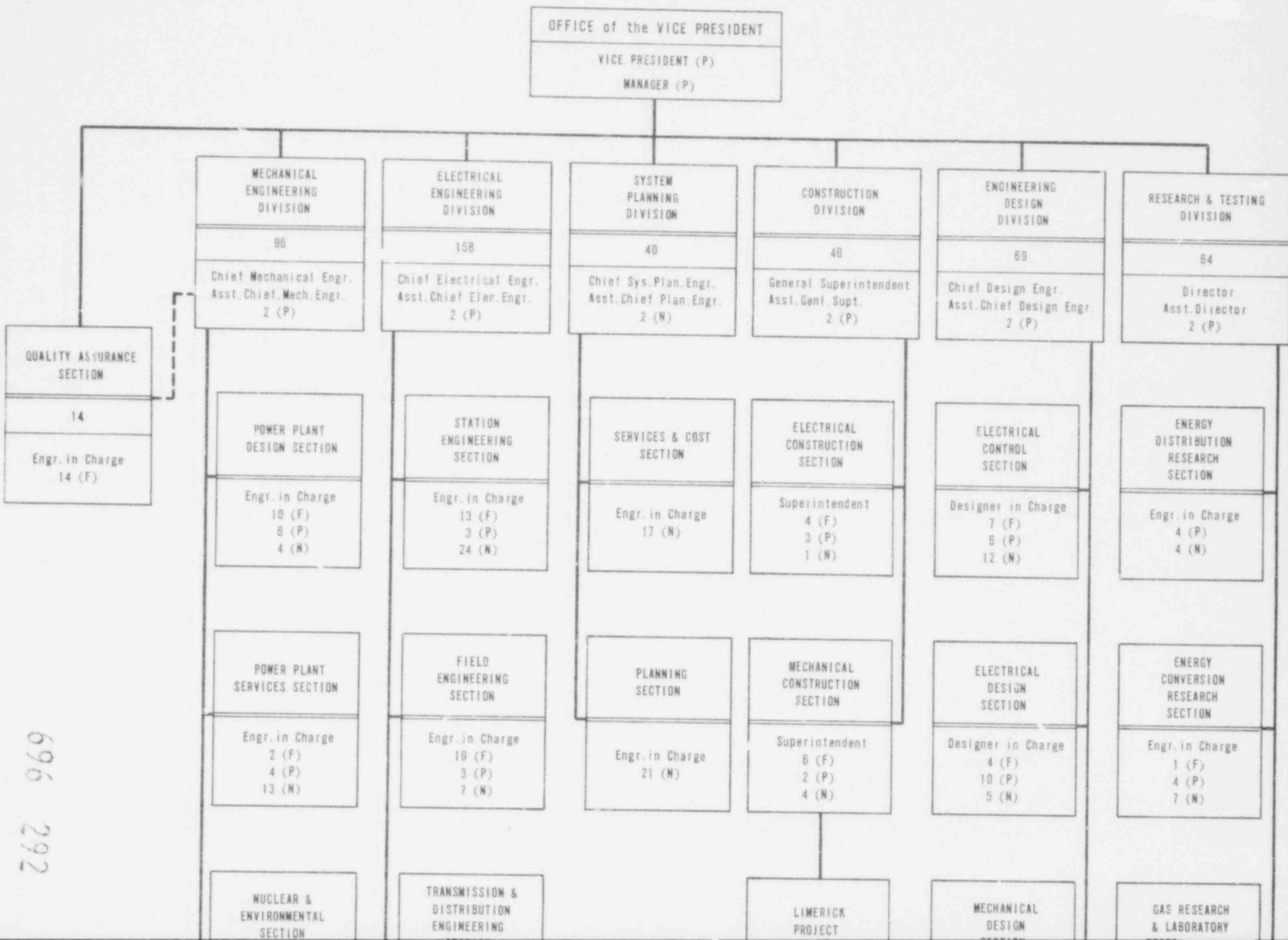
ELECTRIC PRODUCTION D  
PHILADELPHIA ELECTRIC

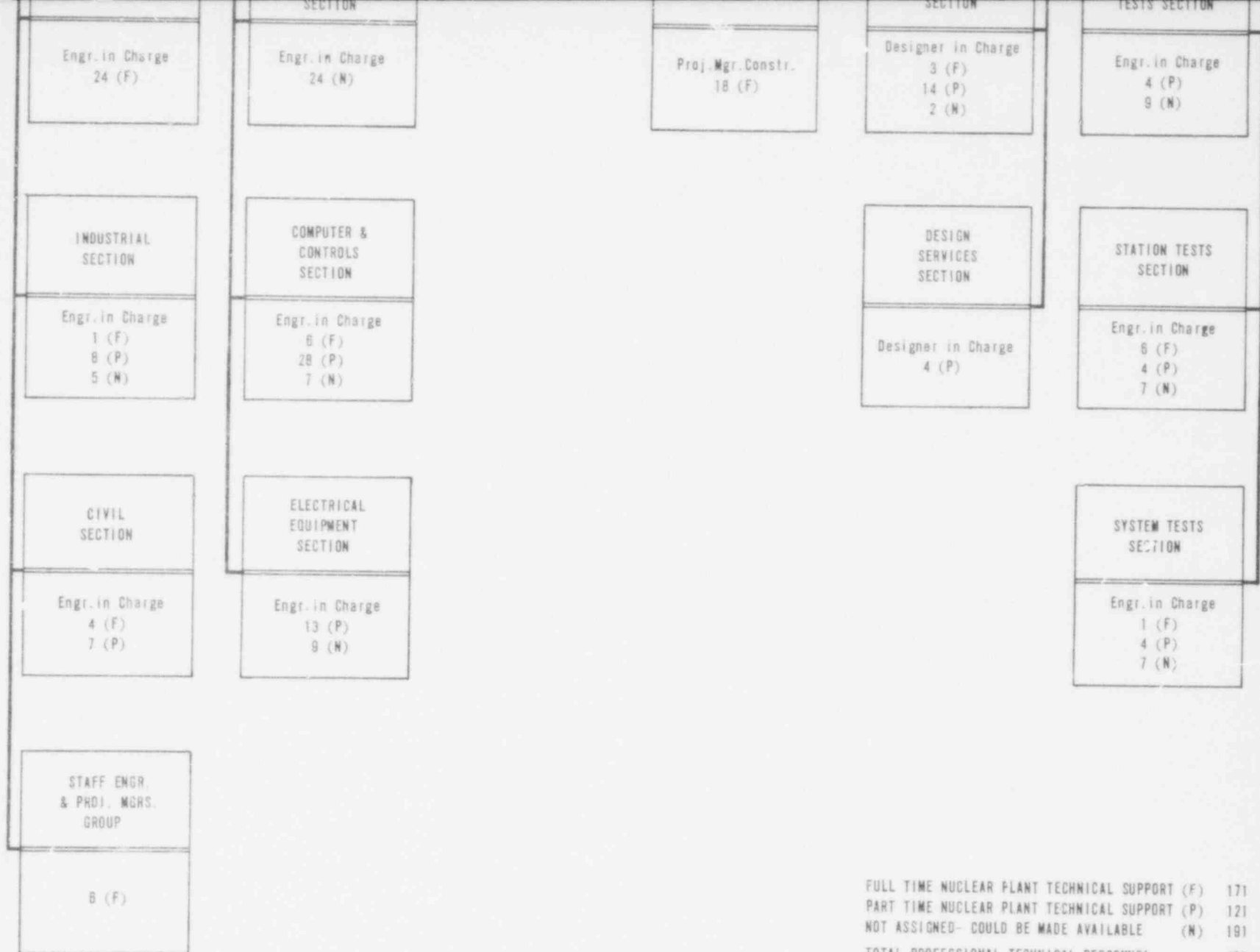
FIGURE 2

696 290

VICE PRESIDENT  
PRESIDENT  
R

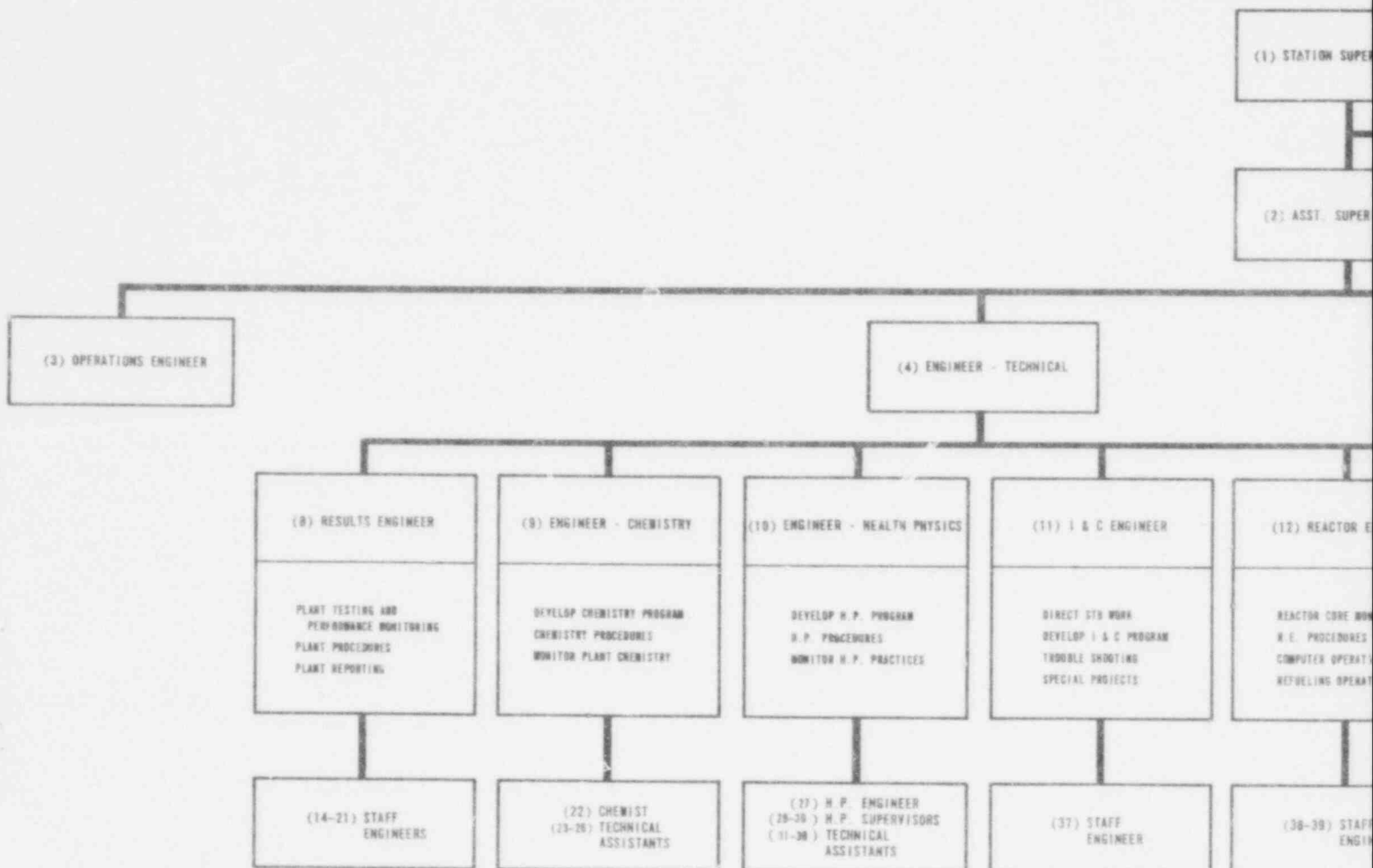




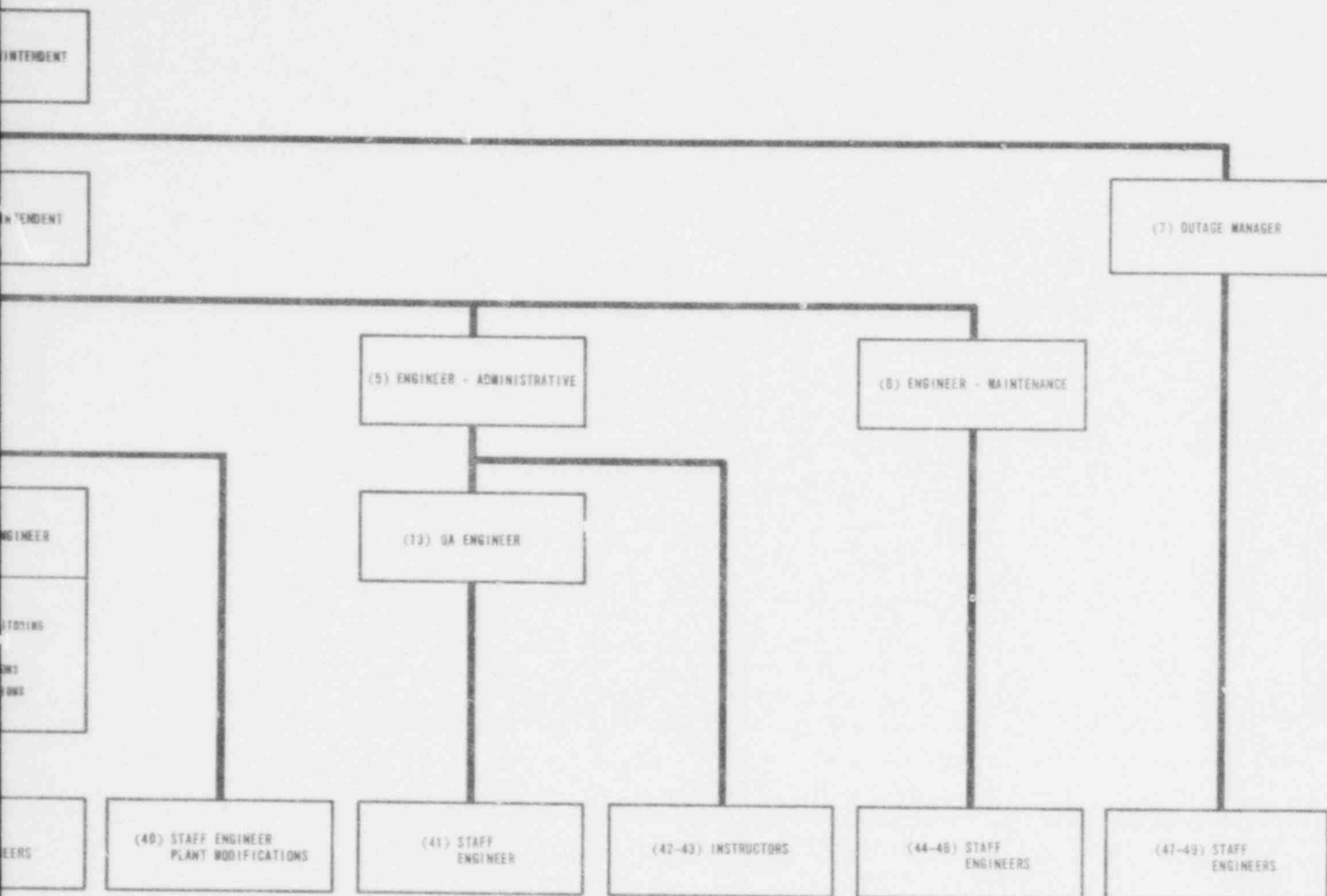


ORGANIZATION CHART  
ENGINEERING AND RESEARCH DEPARTMENT  
ENGINEERING-PROFESSIONAL-TECHNICAL UNITS  
PHILADELPHIA ELECTRIC COMPANY

FIGURE 3



PEACH BOTTOM ATO  
TECHNICAL  
FIGURE

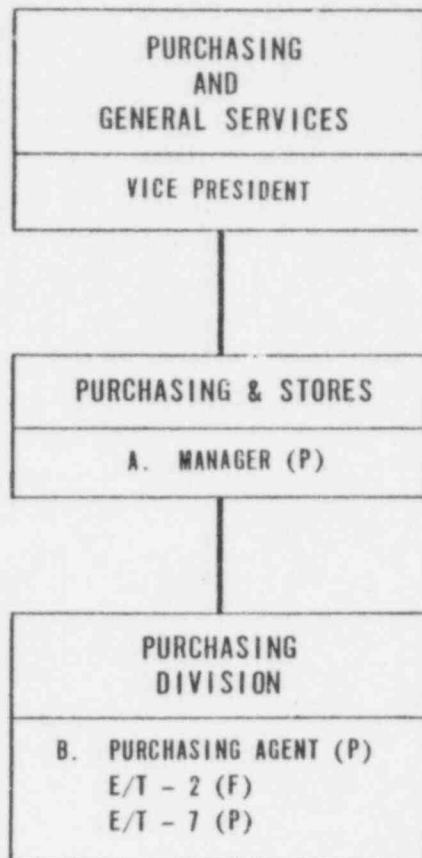


NUCLEAR POWER STATION  
 STAFF  
 E 4

POOR ORIGINAL

NOTE: NUMBERS IN PARENTHESIS CORRESPOND TO  
 POSITION DESIGNATIONS IN TABLE #5.

696 295



E/T : NUMBER OF ENGINEERING-TECHNICAL PERSONNEL  
(ALL HAVE FORMAL COLLEGE EDUCATION)

(F) FULL TIME

(P) PART TIME

PURCHASING and GENERAL SERVICES DEPARTMENT  
PHILADELPHIA ELECTRIC COMPANY

FIGURE 5